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Surgery, Gynecology and Obstetrics

PUBLISHED IN COLLABORATION WITH
JOURNAL DE CHIRURGIE, PARIS
ZENTRALBLATT FÜR DIE GESAMTE CHIRURGIE UND IHRE
GRENZGEBIETE, BERLIN
ZENTRALBLATT FÜR DIE GESAMTE GYNÄKOLOGIE UND
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Volume XVIII
January to June, 1914

193605
21.1.26

PUBLISHED BY
THE SURGICAL PUBLISHING COMPANY OF CHICAGO
30 NORTH MICHIGAN AVENUE, CHICAGO
1914

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INDEX OF SUBJECT MATTER

GENERAL SURGERY

SURGICAL TECHNIQUE

Operative Surgery and Technique

- Preparatory and post-operative treatment, 344
- Two-stage operation, 533

Aseptic and Antiseptic Surgery

- Alcohol dressings, 229
- Disinfection, with thymol alcohol, 1; with iodine, 1, 229

Anæsthetics

- Ether percentages, 1
- Anæsthesia, administration of alkaloids before, 1;
 - General, 124; Various methods of, 126; Ether, 572; Chloroform, 457; Intratracheal insufflation, 2, 124, 229; Pantopon-Scopolamine, 3; Nitrous Oxide-Oxygen, 572; Spinal, 2, 124, 344; Sacral, 457; Local, 3, 4, 230, 572; Hedonal, 4; Paralysis during, 126; in respect to shock, 3; Influence of carbon dioxide on heart in varying degrees of, 345
- Anæsthetic in post-operative course in laparotomy, 127
- Narcosis, Peroral, 230

SURGERY OF THE HEAD AND NECK

Head

- Alveolar nerve, Injections into inferior, 128
- Harelip, 127
- Lip, Cancer of, 128; Uranoplasty by transplantation of flap from upper, 457
- Salivary glands, Syphilis of, 4
- Temporo-maxillary articulation, Bilateral ankylosis, 458
- Maxilla, Bony ankylosis of, 5
- Frontal sinus, Suppuration of, 537; Empyema of, 230; Tumors of, 345; Results following operation on, 230
- Skull, Fractures of, 458; Surgery of, 458
- Hydrocephalus, Cisterna-sinus drainage for, 5; Experimental, 459
- Cerebello-pontine angle, Tumors of, 6
- Brain, Hæmorrhage from, 459; Tumors of, 231, 345, 346; Surgery of, 6
- Dystrophia adiposo-genitalis, 8
- Hypophysis, Active constituents of, 7; Extract of, 573; Tumor of, 232; Cysts of, 346; Diseases of, 7
- Pineal gland, Tumors of, 8

Neck

- Carotid body, Tumors of, 347, 574
- Cervical lymphadenitis, Tuberculous, 129
- Submaxillary glands, Branchial epithelioma involving, 232
- Parathyroid glands, Physiology of, 351
- Thyroid, Physiology of, 8; Pathology of, 348, 575; Innervation of, 459; Relation of thymus and, to Basedow's disease, 349; Surgery of, 233

- Goiter, Observations on, 460; Symptoms and pathology of, 348; Morphological composition of blood in, 349; Simple and exophthalmic, 460; Exophthalmic, 349, 350, 460; Operations for, 234
- Hyperthyroidism, 232; Juvenile, 575
- Tetany, Observations on, 460

SURGERY OF THE CHEST

Chest Wall and Breast

- Breast, Cancer of, 9, 234; Cystic disease of, 461; Amputation of, 9
- Chest wall, Sarcoma of, 352
- Clavicle, Luxation of, 129
- Thoracic cavity, Infection of, 130
- Pneumothorax, Artificial, 9, 575
- Pleura, Empyema of, 235, 352; Surgery of, 536
- Mediastinum, Lesions in region of, 10
- Status lymphaticus, 461
- Thymus, Removal of, 461; Relation between thyroid and, 235; Hyperplastic, 235

Trachea and Lungs

- Respiratory tracts, Mycoses of mucous membrane of, 236
- Trachea, Cylindroma of, 236; Tuberculosis of, 130
- Pulmonary and bronchial circulation, Study of relation of, 236
- Bronchiectasis, 576
- Lungs, X-ray examination of, 462; Abscess of, 535, 536; Tuberculosis of, 234; Gangrene of, 352

Heart and Vascular System

- Heart, Injury of, 463; Treatment of wounds of, 464, Rupture of valves of, 10; Direct massage of, 10

Pharynx and Œsophagus

- Œsophagus, Some interesting cases of, 11; Carcinoma of, 11, 237; Surgery of, 11, 465; Diffuse dilatation of, 464
- Œsophagoscope, 576

Miscellaneous

- Chest, Radiology of, 131
- Anterior thoracic wall, Teleröntgenogram of, 131
- Chest wall, diaphragm and pericardium, Transplantation to cover defects of, 12
- Thoracic viscera, Statics and mechanics of, 12

SURGERY OF THE ABDOMEN

Abdominal Wall and Peritoneum

- Abdomen, Treatment of post-operative adhesions of, 353; Incisions in, 237; Administration of oxygen into, 132; Lymphangioplasty for drainage of, 238; Surgery of, 12

- Subdiaphragmatic abscess, 13
 Coliotomy, Incision in, 253
 Ascites, Surgical treatment of, 13, 466
 Peritoneum, Questions regarding, 239; Sensitiveness of, 577; Inflammations of, 13, 132, 577; Resistance of, 577
 Extraperitoneal adenoma and intraperitoneal myoma, 13
 Hernia, Rare forms of, 133; Femoral, 466; Umbilical, 239; Inguinal, 14, 133, 239, 353, 466; Incarcerated, 239; Treatment of, 354, 577; Accidental wounds in surgery of, 240
 Mesentery, Rupture of, 467; Cysts of, 133

Gastro-Intestinal Tract

- Stomach, X-ray examination of, 467; Endoscopy of, 135; Position of, in children in relation to posture, 14; Lesions of, 240, 468; Tetany, 578; Diseases of, 134; Ulcers of, 15, 16, 240, 241, 242, 243, 354, 355, 460, 533; Carcinoma of, 17, 578; Polyadenoma of, 240; Fibroma of, 241; Hair-ball in, 134; Digestion of living tissue in, 241; Autoplasty of, 17; After-effects of surgery of, 135
 Pylorus, Physiology of, 17; Stenosis of, 470; Spasm of, 355; Ulcer of, 242; Permeable; Exclusion of, 135, 579; Stretching of, 356
 Duodenum, Mobilization of, 244; Ulcer of, 243, 578; Diverticula of, 19; Retroperitoneal rupture of, 18
 Jejunostomy, 470
 Intestines, Obstruction of, 19, 20, 21, 136, 137, 471, 579; Anastomosis of, 137; Fistulae of, 356; Rupture of, 471, 472; Carcinoma of, 244; Fibroma of, 244; Mobilization of, 247; Resection of, 356; Surgery of, 582
 Pericæcal membranes, Study of, 139
 Jönnesco's membrane, Treatment of, 534
 Jackson's veil, Significance of, 246
 Cæcum, Morphology of, 246; Mobile, 579
 Appendix, Röntgen ray diagnosis of, 138; Inflammation of, 137, 138, 245, 472, 580
 Colon, Stasis of, 246, 535, 580; Obstruction of, 581; Malignancies of, 139; Cancer of, 248, 356, 472
 Rectum, Imperforate conditions of, 357; Carcinoma of, 248
 Anorectal line, Clinical significance of, 358
 Anus, Atresia of, 21; Fistula of, 21
 Hæmorrhoids, Treatment of, 473; Operation for, 21
 Gastro-intestinal tract, Radiographical studies of, 134; Abnormalities in, 249; Constipation, 140
 Human distomiasis, 250

Liver, Pancreas, and Spleen

- Liver, Röntgenoscopy of, 22; Injuries of, 22; Abscess of, 473, 582; Cysts of, 23
 Gall-stones, 251, 583
 Gall-bladder, Diseases of, 358; Inflammation of, 251; Surgery of, 358
 Bile-duct, Repair of, 251
 Pseudopancreatic cysts, 252
 Pancreas, Necrosis of, 252; Inflammation of, 23, 140, 252
 Spleen, Function of, 583; Hypertrophy of, 141; Hodgkin's disease of, 359; Surgery of, 24

Miscellaneous

- Abdominal röntgen ray work, 360
 Abdominal conditions, Röntgen ray diagnosis of obscure, 134
 Abdominal and thoracic organs, Changes in, 584
 Abdomen, Differential diagnosis of tumors of, 359

- Post-operative symptoms after laparotomy, 252
 Comparative value of free flaps from the omentum, peritoneum, and mesentery for strengthening sutures, 21

SURGERY OF THE EXTREMITIES

Diseases of the Bones, Joints, Muscles, Tendons — Conditions Commonly Found in the Extremities

- Periosteum, 474; Function of, 360, Injuries of, 584
 Bone, Radiography of, 584; Formation, 255; Changes in, 253; Rachitic disease of, 25; Diseases of, 25; Inflammation of, 253, 254, 361, 475, 585; Tuberculosis of, 256, 361, 477, 537; Syphilis of, 475, 585; Osteomalacia of, 254, 585; Carcinoma of, 27; Cysts of, 474, 586; Heliotherapy in diseases of, 478; Transplant of, 360
 Multiple exostoses, 254, 586
 Chondrodystrophy, Family, 474
 Cartilages, Torn semilunar, 481
 Joint, Regeneration of, 478; Charcot, 362; Lesions of, 586; Rheumatic, 142; Origin of — mouse, 257; Injuries of knee-, 142; Tuberculosis of hip-, Diseases of, 25, 141, 257; Tuberculosis of, 27, 141, 142, 361, 480; Inflammations of, 26, 27, 142, 258, 478, 479
 Peritendinous angiomas, 587
 Muscles, Atrophy of, 27; Sarcoma, 586
 Intramuscular ossification, Traumatic, 362
 Hand, Surgical treatment of infections of, 576

Fractures and Dislocations

- Fractures, Mechanics of production of, 28; Spontaneous, 363; of radius, 143, 587; of femur, 143, 588; of tibia and fibula, 482; of ankle and wrist, 28, 588; Treatment of, 28, 259, 363, 481, 482
 Acromion process, Injuries to, 587
 Knee, Fixation of, 29
 Dislocation, of shoulder, 144, 482, 483, 588; of femur, 29; of hip, 483; of tibiotarsal joint, 258

Surgery of the Bones, Joints, Etc.

- Surgical treatment, of bones, 366; of fractures, 30, 364, 484, 486, 588, 589; of osteomyelitis, 366; of infantile paralysis, 368; of arthritis of hip, 32; of shaft of femur, 484; of pseudarthrosis of neck of femur, 144; of lower end of femur, 486
 Joints, Mobilization of, 367, 590
 Arthroplasty, 260
 Tendons, Repair of, 591
 Transplantation, of bone, 144, 259, 466, 486, 589; of joints, 368; of tendons, 32, 146, 487, 591; of cartilage, 31; of fat, 487
 Amputations, Hæmostasis in shoulder and hip-joint, 487
 Grafts, Osteo-articular, 256; Intramedullary, 590
 Nail extension, Accidents in, 484; in treatment of fracture of femur, 485
 Bone-plating, Metal, 486
 Plates and nails in bone surgery, 260

Orthopedics in General

- Orthopedic conditions near shoulder-joint, 591
 Orthopedic surgery, Recent advances in, 262, 491
 Poliomyelitis, Early symptoms of, 262; Treatment of, 145, 389
 Madelung's deformity, of wrist-joint, 33; Pathogenesis of, 488
 Congenital defects of fibula, 31

Congenital defects in skeleton of the trunk, 33
 Congenital fragility of bones, 145
 Crippled children, Gymnastics for, 33
 Little's disease, 261, 592
 Schlatter's disease, 593
 Heine-Medin's disease, 593
 Paralysis, of quadriceps femoris, 368; Infantile, 146, 260, 488, 489; Spastic, 261, 489; Surgery for, 261
 Flat-foot, Treatment of, 290, 491
 Weak-foot, Etiology, diagnosis and treatment of, 33, 369
 Club-foot, 146
 Hollow-foot, 262, 369

SURGERY OF THE SPINAL COLUMN AND CORD

Spine, Scoliosis of, 34, 264, 492, 594, 595; Osteomyelitis of, 147; Typhoid of, 492; Pott's disease of, 147, 264, 369, 492; Tumors of, 35, 492, 595
 Cauda equina, Diseases of, 597
 Cervical vertebrae, Enchondroma of first, 596
 Post-sacral dermoid, 36
 Sacrum, Ventral tumors of, 35
 Foerster's operation, 494
 Laminectomy for aneurismal sarcoma, 36

SURGERY OF THE NERVOUS SYSTEM

Nerves, Regeneration of, 370; Luxation of ulnar, 370; Stretching and section of, 265; Surgery of, 265
 Hypogastric plexus, Surgical methods of approach to, 18, 597
 Gastric crises of tabes, Stretching solar plexus for, 37

DISEASES AND SURGERY OF SKIN, FASCIA, APPENDAGES

Burns, Treatment of, 266, 598
 Fascia, Tumors of, 598; Transplantation of, 148, 371, 495
 Hygroma cysticum colli and hygroma axillare, 598

MISCELLANEOUS

Clinical Entities—Tumors, Ulcers, Abscesses, Etc.

Tumor Cells, Experimental transmission of, 148
 Tumors, Chicken, 495; and trauma, 599
 Cancer, Study of, 148; Diagnosis of, 37, 268; Pathogenesis of, 149; Control of, 266, 372; Prophylaxis of, 521; Metastasis formation in experimental, 149; Multiple primary, 38
 Sarcoma and trauma, 149
 Precancerous conditions, 501
 Paraffinoma, 150
 Krausoris and cancrroid, 373
 Cholesteatomas, 150
 Diabetes, Treatment of, 600
 Shock, Pathology of, 39; Physiotherapy of, 267; Nature of, 601
 Connective tissue, Study of mechanism of growth of, 37
 Transplantation, of tissues, 151, 602; of organs, 267; Autoplastic and homoplastic, 267; Cultivating adult animal, 602
 Parenchymatous organs, Congenital cystic disease of, 151
 Glanders in man, Acute malignant, 373

Tetanus, Treatment of, 495, 603
 Surgery of childhood, 39

Sera, Vaccines, and Ferments

Serodiagnosis, Alderhalden's, 373
 Complement-fixation reaction with cerebro-spinal fluid in carcinoma, 153
 Wassermann reaction, 603
 Vaccine, Gonorrhœal, 40, 153, 603; Therapy, 374

Blood

Hæmorrhage, Control of, 603
 Hæmorrhagic disorders, 153
 Circulation, Studies on, 153
 Blood, Changes in, 374; Isolation of a new vasoconstrictor substance from, 374; Difference between maternal and foetal, 374; transfusion, 268, 375, 604
 Thrombosis, 268
 Embolism and thrombosis, 154

Blood and Lymph-Vessels

Aneurism, Traumatic arteriovenous, 495; Ligation of innominate artery for, 535; Treatment of, 40
 Carotid artery, Ligation of, 496
 Varicose veins, Ambulatory treatment of, 375
 Portal vein, Ligation of, 376
 Thoracic duct, Injuries of, 41
 Lymphosarcoma and endothelioma, Relation of Hodgkins' disease to, 376
 Hodgkins' disease, 604

Poisons

Streptococci, Method of isolating pathogenic, 497
 Local foci of infection causing systemic disturbances, 154
 Bovine tubercle bacillus, Infection of children with, 496
 Tubercle bacilli, Relative value of living and dead, 153
 Anaërobic bacteria, Methods of cultivating, 497
 Bacterial invasion of blood, 155
 Gas bacillus infection, 269
 Septicæmia, Cutaneous manifestations of, 376
 Blastomycosis, Systemic, 533

Surgical Therapeutics

Benzol, Treatment of leukæmia with, 377
 Pituitrin, Influence of, upon blood-pressure after hæmorrhage, 41
 Potassium mercuric iodide, Study of, 498
 Collargol, Effect of, on infection, 604
 Physicochemical treatment of cancer, 41
 Chemotherapeutic treatment of cancer, 277
 Bismuth paste treatment, 605

Electrology

X-ray, Generation of, 42; diagnosis, 155; Heart shadows in, 378; Therapy, 43, 269, 379, 498
 Röntgen-ray burns, Present-day danger of, 499
 Röntgentherapy, Experience with, 379
 Röntgenograms, Removing discolorations from stained, 42
 Radiotherapy of malignant diseases, 44; Technique, 606
 Radium, and carcinoma, 499; and mesothorium treatment, 381, 500; treatment of malignant tumors, 380, 381
 Mesothorium, Bactericidal effect of, 270; Carcinomata treated with, 380
 Irradiation of malignant new-growths, 606

Secondary rays, Therapeutic value of, 45

Non-operative treatment of cancer, 156

Therapeutic technique, 44

Sliding diaphragm for improving the quality of skiagraphs, 42

Bismuth meals, Technique and standardization of, 498

Microradiography, 378

Military and Naval Surgery

Military surgery, 270

GYNECOLOGY

Uterus

Cervix, Lesions of, 503; Malignant disease of stump of, 46; Cancer of, 46, 157, 271, 382, 609; Mixed mesodermal new-growths of, 607

Uterus, Rare new-growths of, 48; Adenoma of cornea of, 272; Cancer of, 47, 157, 158, 271, 272, 278, 382, 383, 501, 502, 608; Chorio-epithelioma, 382; Neoplasms of, 274; Myosarcoma of, 47; Myoma of, 48, 273, 384, 609; Fibromyomata of, 274, 383, 610; Fibroids of, 384, 610, 611; Lipoids in the human, 503; Perforating hydatidiform mole, 48, 272; Cysts of, 158; Hernia of, 276; Tuberculosis of, 46, 158; Rupture of, 615; Prolapse of, 51, 159, 160, 275, 504, 612, 613, 616; Displacement of, 384, 385, 504; Inversion of, 50, 275; Retroversion of, 505; Retroflexion of, 614; Ventrofixation of, 505, 613; Distribution of extractives in non-striated musculature of, 607; Surgery of, 51, 52, 161, 276, 278, 281, 282, 385, 505, 614; Hæmorrhages from, 158; Dysmenorrhœa, 50, 159, 277, 504; Menorrhagia and metrorrhagia, 50; Menstruation, 48, 49, 277, 384, 612

Periodic pains in women, 49

Pessary treatment, 51

Uterus and ovaries after röntgen treatment, 402

Endometrium, Inflammation of, 503

Symptom-complex of climacteric, 504

Adnexal and Periuterine Conditions

Corpus luteum, Rôle of, 385; Organotherapy of, 506

Ovary, Changes in, 506; Internal secretion of, 506

Hernia of, 616, 617; Tumor of, 282, 386, 616; Sarcoma of, 282; Melanosarcoma of, 52; Papilloma of, 162; Cysts of, 282, 386, 507, 616; Diseases of, 507; Periodic swelling of, 385

Adnexa, Disease of, 386, 508; Inflammation of, 162; Tuberculosis of, 52

Round ligament, Desmoid tumors of, 387

Sacro-uterine ligaments, Anatomy and surgical utility of, 162

Tube, Glycogen content of mucous membrane of, 52; Collagen in, 386; Inflammation of, 162, 283; Gonorrhœa of, 509; Sterilization of, 387

Pelvic cellulitis, 53

Sterility, 507

Castration, Therapeutic significance of, 53

External Genitalia

Vagina, Gonorrhœal inflammation of, 54, 509; Leucorrhœa of, 144, 389; Hernia of, 283; Carcinoma of, 509; Cysts of, 617; Rupture of, 163

Vaginismus, Is a bloody dilatation necessary in, 54

Vesicovaginal fistula, 54, 388

Uretero-vesical-vaginal fistula, 163

Urethro-vaginal septum, 617

Urethra, Diverticula of, 389; Caruncle of, 389; Prolapse of ureter through, 389; Fistula of, 390

Vulva, Carcinoma of, 55; Inflammation of, 55, 163, 617, 618

Labia majora, Sarcoma of, 155

Pelvic floor and its relation to genesis of genital prolapse, 155

Trachelorrhaphy, 387

Miscellaneous

Gynecology, X-rays in, 56; Gonococcus vaccine in, 620; Organotherapy in, 622; Röntgen treatment in, 391, 510; Radium treatment in, 621; Parotitis after operations in, 284

Internal secretions, 284, 390, 509

Female genitalia, Tuberculosis of, 284, 285; Relations of inflammatory conditions of the colon to, 285; Effect of tissue extracts on, 619; Diseases of organs of, 391; Atrasia of, 164; Inguinal hernia of, 56; Fistula of, 510; Tumors of, 620; Prolapse of, 621

Female pelvic organs, Diseases of, 509; Operations on, 164

Pelvis, Split, 622

Female bladder, Deranged function of, 165

Fæcal tumor, 510

Ovulation and menstruation, Time relation between, 619

Vaginal laparotomies, One thousand, 621

Gynecological and neurological diseases, 285

Involution forms of gonococcus neisser, 391

Extracts from organs, Chemical and physiological properties, 164

Passionate phenomena; hyperæmia and hæmorrhagia of female genitalia, 56

OBSTETRICS

Pregnancy and Its Complications

Placenta prævia, 287, 512, 623

Pregnancy, Extra-uterine, 58, 166, 511; Intra-uterine, 286; Ectopic, 392, 511; Ovarian, 392; Tubal, 58, 286; Changes of hypophysis during, 512; Cardiac defects during, 173; Heart disease and, 512, 624; Goiter and, 393; Parathyroid insufficiency during, 287; Galvanic irritability of muscle in, 392; Vomiting of, 625; Hæmorrhage in later months of,

61; Myoma and, 171, 286; Uterine tumors and, 59, 60, 624; Changes in ovary during, 623; Ovarian tumors and, 60, 513; Abdominal pain in, 57; complicated by appendicitis, 59; Function of liver during, 170, 512; Diabetes of, 172, 625; Pyelitis in, 173, 393, 624; Kidney and, 59, 173, 393; Tuberculosis and, 172, 287; Syphilis in, 173; Hypertrichosis in, 513; Intoxication of, 171; Toxæmias of, 514; Hygiene of, 289; Artificial

- interruption of, 60; Hypertrophy of breast glands during, 518; Position of heart and diaphragm during, 518; Ferments against milk sugar in blood serum during, 517; Calcium content of blood during, 295; Therapeutic use of normal serum of, 67; Studies of metabolism in, 517; Thrombosis of vessels at placental site during, 295; Modification of hæmoglobin catalysor during, 66; Intra-abdominal pressure in, 180; Abdominal measurements in, 68
- Eclampsia, 167, 168, 626; Pathogenesis of, 626; Cause and cure of, 626; Rapid delivery in, 287; Treatment of, 61, 168, 394, 514
- Cæsarean section, 61, 62; Study of, 395; Abdominal, 168; Classical, 169; Extraperitoneal, 169, 288, 626; Indications for, 394; during past year, 395; Treatment of placenta prævia by, 396; Incision for, 396
- Abortions, 289; Indications for, 169; Criminal, 170; Artificial, 626; Examination in febrile, 514; Treatment of febrile, 396; Simultaneous, 514; Treatment of, 63, 170, 288, 515
- Post-abortion affections, 170
- Labor and Its Complications*
- Labor, Obstruction in, 174, 175, 515; complicated by myoma, 174; Emphysema of face, neck and chest during, 516; Vaginal secretions in, 397; Disinfection during, 174; Artificial premature, 174; Management of, 627
- Delivery, Intraperitoneal hæmorrhage during, 397; in contracted pelvis, 627, 628; Normal and artificial birth, 515; Rectal examination during, 289; Eye injuries during, 289; Rupture of uterus during, 629; Rupture of cord during, 629; Tumor of child complicating, 629; Sudden death shortly after, 178
- Presentations, New manipulations in brow, 289; Head, 397
- Prolapse of lower extremities beside head, 515
- Rupture of membranes during labor and puerperium, 175, 628
- Posterior position, Occipito-problem in, 289
- Birth in cases of occipital and dorsal meningocele, 63
- Birth, Shape of head and mechanism of, 175
- Puerperium and Its Complications*
- Puerperal, sepsis, 398; fever, 176, 177, 516; infection, 64, 177; metritis dissecans, 64; Uterus, 63, 290; Eclampsia, 290; streptococcæmia, 290; pulmonary embolism, 291
- Puerperium, Hæmolytic streptococci in pathology of, 176; Dorsal position during, 630
- Post-abortion and post-partum infection, 397
- Miscellaneous*
- Human embryo, Manner of embedding, 293
- Lithopedion, 402
- Fœtus, two-headed, 402; outside chorion, 519
- New-born, Hæmorrhage in, 64, 291; Subdural hæmatoma in, 292; Bleorrhœa in, 64; Tetany of, 292; Icterus of, 633; Signs of maturity in, 291; Serious anomalies in extremities of, 178; Weight of, 632
- Birth, trauma, 400, 401, 632; infection, 400; Narcosis and anæsthesia in, 401; Paralysis in, 631
- Birth weight less than 3,000 grams, 401
- Infant, mortality, 179; hernia in, 293
- Nurslings, Salt fever of, 292
- Mother's milk injurious to own offspring, 65
- Abderhalden's diagnosis, 66, 180, 294, 295, 399, 630, 631
- Pregnancy, Rosenthal's diagnosis of, 630; Principles of nutrition during, 517; Ovulation, conception, and duration of, 517; Blood-pressure in normal and abnormal, 398; Tuberculosis and, 631
- Ante-natal hygiene, 633
- Periosteal dysplasia and multiple intra-uterine fractures, 519
- Epithelium of misplaced chorionic villi, Malignant degeneration of, 518
- Maternal and foetal syphilis, Diagnosis of, 520
- Placenta, Miliary tuberculosis of, 294
- Placental hormones, 297
- Placental epithelium, Gogli's "internal network" in, 298
- Amniotic fluid, Origin of, 298; Deficient absorption of, 517
- Hypophysis, Extract of, 296; and its active principles, 67
- Colostrum bodies, Etiology of, 180
- Insemination and parturition, Duration of interval between, 180
- Intra-uterine amputation of femur with occlusion of the urethra and rectum, 297
- Momburg tube, Use of, 297, 519
- Pelvis, Measurement of, 179, 402
- Pelvis, Increasing size of, 520
- Female organism, Absorption of spermatozoa in, 399
- Sterility, Points on, 179; Relation of cervix to, 65
- Delivery after uniting a double uterus by operation, 520
- Obstetrics, Experiences with pituglandol in, 67; Pituitary extract in, 67, 296, 402; Late results of procedures in, 297; X-ray in, 294

GENITO-URINARY SURGERY

Kidney and Ureter

- Adrenal capsules, Recent examination of, 69
- Suprarenal capsules, Influence of, 69
- Kidney, Calculus of, 181, 298, 634; Röntgenographic study of, 69; Diagnosis of pelvic, 404; Injuries to vessels of, 182; Infantile, 403; Movable, 406; Prolapse of, 298; Rupture of, 182; Irregular vessels of, 298; Hæmorrhage from, 70, 181, 404; Hæmic infections of, 405; Tuberculosis of, 70, 299, 635, 636; Hypernephritis, 634; Nephritis, 72; Bright's disease, 634; Hydronephrosis, 72, 182, 299; Pyonephrosis, 300, 520; Nephroptosis, 182; Hypernephroma of, 183; Cancroid of, 405; Surgery of, 73, 76, 184, 301, 406, 521, 636; Functional tests of, 74, 75, 183, 407, 637
- Kidney cushion, New, 407
- Pyelography, 409, 521; Pyeloradiography, 408; Pyelitis, 73, 300, 638; Pyelonephritis, 299
- Ureter, Calculi of, 76, 409, 639; Stricture of, 522; Injuries of, 410; Anastomosis of, 522; Cysts of, 301; Catheterization of, 639; Extravesical method of approaching the bladder end of, 410; Repair of defects of, 302; Implantation of, 302, 639; Total section of, 640

Bladder, Urethra, and Penis

- Bladder, Calculus, 184, 523, 641; Lesions of, 185; Malakoplakia of, 642; Inflammation of, 410, 523; Tumors of, 77, 78, 303, 304, 413, 414, 641; Ulcer of, 644; Fistulae of, 523; Parasite of, 643; Diverticula of, 305, 523, 641; Purpura of, 77; Elimination of, 78; Surgery of, 78, 305, 524; Emptying, 185
 Urethra, Polyps of, 305
 Urethrotome, New, 524
 Urine, Chetwood operation for retention of, 185
 Gonorrhoea, Chronic, 78; Vaccination in, 305; cure of, 414; Treatment of, 419

Genital Organs

- Testicles, Atrophy of, 415; Undescended, 414; Malignant disease of, 415; Tumor of, 185; Sarcoma of, 79; 645; Transplantation of, 305; Removal of, 527
 Orchitis in children, 185
 Orchidopexy, 644
 Spermocystitis, 79
 Epididymitis, Treatment of gonorrhoeal, 306

Seminal vesicles, Surgery of, 418

Scrotum, Operation on, 644

- Prostate, Atrophy of, 80, 186; Hypertrophy of, 415, 416, 527, 645; Obstruction of, 645; Cancer of, 524, 646; Sarcoma of, 417; Gumma of, 417; Inflammation of, 527; Surgery of, 186, 306, 417, 527, 646, 647, 648
 Intravesical prostatic intrusions, 81

Miscellaneous

- Urinary tract, Treatment of hæmic infection of, 418
 Hæma-Uro-Chrome, 187
 Leukæmia, Bence-Jones proteinuria in, 419
 Hæmoglobinæmia, General symptoms, 527
 Genito-urinary, tuberculosis, 187; Diseases, 648
 Complement-fixation test in gonococcus infection, 419
 Non-toxic antigonorrhoeal vaccine, 648
 Antiseptic value of internal use of hexamethylenamine, 307
 Organs of internal secretion in relation to male organs of generation, 82
 Urology, Encyclopedia of, 81; Surgery of, 81

SURGERY OF THE EYE AND EAR

Eye

- Lachrymal obstruction, Treatment of, 529
 Lachrymal sac, Extirpation of, 529
 Dacryocystitis, 420
 Ophthalmia, Metastatic, 83; Neonatorum, 84; Arterio-facta, 84
 Blepharorrhoea in new-born, 309
 Eyes, Affections of, 309
 Iritis, Double tubercular, 529
 Trachoma, Treatment of, 420
 Retina, Embolism of branch of artery of, 528; Detachment of, 189; Anomaly of, 189
 Orbital abscess, 530
 Pulsating exophthalmos, Treatment of, 529
 Hydrophthalmos, 83
 Cataract, Extraction of, 529, 649
 Glaucoma, 83; Operation for, 84, 189, 649
 Choroid, Sarcoma of, 84, 649; Tumor of, 529
 Sclera, Rupture of, 83
 Scleritis, Brawny, 529
 Anterior ring of opacity in lens following contusion, 189

Ear

- Ears, Congenital absence of both, 309
 Auditory canal, Furunculosis of, 190
 Eustachian tube, Examination of, 530
 Nystagmus, 86
 Middle ear, deafness, 85; Suppuration of, 420; Epithelioma of, 649
 Otitis media, Nasopharyngeal surgery in, 85
 Otitic meningitis, Treatment of, 190
 Mastoid, Inflammation of, 420, 649; Dressing, 85; Vaccines after operation on, 650
 Otosclerosis, 85
 Labyrinth, Indications for and technique of operation on, 86, 310
 Cavernous sinus thrombosis, 310
 Meningitis, Purulent, 311
 Meningeal complications, Diagnosis and treatment of, 420
 Intracranial diseases from standpoint of otolaryngologist, 310

SURGERY OF THE NOSE, THROAT, AND MOUTH

Nose

- Rhinitis, Hypertrophic, 422
 Nasal septum, Deformities of, 530; Resection of, 312; Surgery of, 87, 423
 Nasal accessory sinuses, Suppurative diseases of, 422; Affections of, 651
 Sinusitis exulcerans of frontal sinus, 191
 Nasal fossæ, Tumors of, 422
 Nasal surgery, 312, 652
 Septal deviation, Operation for correction of, 87
 Mucocele, Chronic, 422
 Submucous operation, 652

- Sphenopalatine ganglion neuralgia, 88
 Ozena, Etiology of, 520; Treatment of, 87

Throat

- Tonsil, Inflammation of, 88; Surgery of, 88, 652
 Vincent's angina, 89
 Larynx, Changes in, 312; Edema of, 191; Tuberculosis of, 89; Surgery of, 653
 Laryngology, Limits of, 423
 Pharynx, Malignant growths in, 89; Sporotrichosis of, 191
 Retropharyngeal abscess, 423

Mouth

Palate, Autoplastic operation on, 434
Cleft palate, Treatment of, 653
Odontoma, Follicular, 653
Pyorrhœa alveolaris, 90
Oral surgery, 313

Oral abnormalities, 424
Tongue, Cancer of, 531
Mouth, Plastic surgery of, 312
Closing sinus between antrum of highmore and mouth, 313

INDEX OF BIBLIOGRAPHY

GENERAL SURGERY

Surgical Technique

Operative Surgery and Technique, 91, 192, 314, 425, 539, 652
Aseptic and Antiseptic Surgery, 91, 192, 314, 425, 539, 652
Anæsthetics, 91, 192, 314, 425, 539, 652
General. Local. General subjects on anæsthetics
Surgical Instruments and Apparatus, 92, 193, 314, 426, 540, 653

Surgery of the Head and Neck

Head, 92, 193, 315, 426, 540, 653
Scalp. Skin. Nerves. Glands. Skull and Maxilla. Meninges. Brain, cerebrum, cerebellum, hypophysis
Neck, 93, 194, 315, 427, 541, 654
Skin. Glands. Muscles and blood vessels. Bones. Thyroid: Goiter, Basedow's disease, Graves' disease. Parathyroid. Retro-pharyngeal conditions

Surgery of the Chest

Chest Wall and Breast, 94, 195, 316, 428, 542, 655
Breast. Incisions, wounds, injuries, etc. Bones. Pleura. Mediastinum. Thymus
Trachea and Lungs, 94, 195, 317, 428, 543, 656
Trachea. Bronchi. Lungs
Heart and Vascular System, 95, 196, 317, 543, 656
Heart. Pericardium. Aorta
Pharynx and Oesophagus, 95, 196, 317, 428, 543, 656
Miscellaneous, 95, 196, 317, 429, 657

Surgery of the Abdomen

Abdominal Wall and Peritoneum, 95, 196, 317, 429, 544, 657
Incisions and drainage. Tumors. Retro- and pro-peritoneal conditions. Peritoneum. Diaphragm. Hernia. Omentum. Mesentery. Urachus. Diverticula
Gastro-Intestinal Tract, 96, 197, 318, 429, 545, 658
Stomach (and Pylorus). Duodenum. Small Intestines. Cæcum. Appendix. Colon. Rectum. Anus
Secretions of, diagnosis, radiology, injuries, hæmorrhages, vomiting, inflammations, obstructions, hernia, ulcer, tumor, surgery, general therapy
Liver, Pancreas and Spleen, 99, 200, 320, 432, 548, 659
Miscellaneous, 100, 200, 320, 453, 549, 660

Surgery of the Extremities

Diseases of Bones, Joints, Muscles, Tendons. General Conditions Commonly found in the Extremities, 100, 201, 321, 433, 549, 660

Bones. Joints. Muscles. Tendons
Inflammations, tumors, cysts, etc.
Fractures and Dislocations, 101, 202, 321, 434, 550, 661
Surgery of the Bones, Joints, Etc., 102, 202, 322, 434, 551, 662
Orthopedics in general, 102, 203, 322, 435, 552, 662

Surgery of the Spinal Column and Cord

Diseases and Deformities of the Spine, 103, 203, 322, 435, 552, 663
Inflammations, tumors, fractures, surgery. Cord

Surgery of the Nervous System

Nervous System, 103, 204, 323, 436, 552, 664
Inflammations, tumors, surgery

Diseases and Surgery of the Skin, Fascia, Appendages

Skin, Fascia, and Appendages, 104, 204, 323, 436, 553, 664
Burns, injuries, inflammations, tumors, ulcers, surgery

Miscellaneous

Clinical Entities, Tumors, Ulcers, Abscesses, Etc., 104, 205, 324, 437, 553, 665
Tumors. Ulcers. Inflammations. Shock. Tissue Transplantation. Surgical Diseases
Sera, Vaccines, and Ferments, 105, 206, 324, 437, 554, 665
Serum. Vaccine. Ferments. Immunization. Anaphylaxis
Blood, 105, 206, 324, 437, 555, 666
Blood picture in general. Hæmorrhage. Coagulation. Thrombosis. Embolism. Transfusion
Blood and Lymph Vessels, 106, 206, 325, 438, 555, 666
Aneurisms. Vessel suture and ligation. Lymph vessels and glands
Poisons, 106, 207, 325, 438, 555, 667
Bacterial. Chemical
Surgical Therapeutics, 106, 207, 325, 438, 556, 667
Surgical Anatomy, 106, 207, 439, 556, 668
Electrology, 106, 207, 325, 439, 556, 668
X-Ray. Electrical treatment and injuries. Heliotherapy
Military and Naval Surgery, 107, 208, 326, 440, 557, 668
Surgical Diagnosis, 107

GYNECOLOGY

Uterus, 107, 208, 326, 440, 557, 669
Tumors. Hæmorrhage. Inflammations. Malformations. Displacements. Injuries. Surgery

Adnexal and Periuterine Conditions, 108, 209, 326, 441, 670
 Ovaries. Tubes. Ligaments. Pelvic conditions in general
 External Genitalia, 109, 209, 327, 441, 558, 671
 Vagina. Vulva. Urethra. Clitoris
 Miscellaneous, 109, 210, 327, 442, 558, 671

OBSTETRICS

Pregnancy and Its Complications, 110, 210, 327, 442, 559, 672
 Pregnancy. Eclampsia and toxæmias. Cæsarean section. Abortion. Complications
 Labor and Its Complications, 110, 211, 328, 443, 559, 672
 Contracted Pelves. Abnormal presentations. Dystocia. Hæmorrhage. Surgical treatment
 Puerperium and Its Complications, 110, 211, 328, 443, 560, 673
 Diseases common to. Infections. Hæmorrhages
 Miscellaneous, 111, 211, 328, 443, 560, 673

GENITO-URINARY SURGERY

Kidneys and Ureters, 111, 212, 329, 444, 560, 674
 Adrenal gland. Kidneys. Ureters

Trauma, calculi, displacement, malformation, hæmorrhage, tumors, inflammations, surgery, functional tests of
 Bladder, Urethra, Penis, 112, 213, 330, 445, 561, 675
 Trauma, calculi, displacement, malformation, hæmorrhages, tumors, inflammations
 Genital Organs, 113, 214, 331, 445, 562, 676
 Testicle. Epididymis. Spermatic Cord. Prostate
 Miscellaneous, 114, 214, 331, 446, 562, 676

SURGERY OF THE EYE AND EAR

Eye, 114, 214, 331, 447, 563, 677
 Glaucoma. Trachoma. Cataract. Inflammations
 Ear, 115, 215, 332, 447, 563, 677
 Outer ear. Middle ear. Internal ear. Mastoids. Brain abscess of otitic origin, etc.

SURGERY OF THE NOSE, THROAT, AND MOUTH

Nose, Throat, and Mouth (and oral surgery), 115, 215, 332, 447, 564, 678
 Nose: external, internal
 Throat: tonsils, adenoids, larynx, pharynx
 Mouth: palate, cleftpalate, teeth, tongue
 General conditions

INDEX OF AUTHORS

- Aagaard, V., 42
 Abderhalden, E., 517
 Adami, J. G., 580
 Adler, H., 637
 Adler, L., 503
 Ahlfeld, F., 177
 Ahlström, E., 519
 Albeck, 165
 Albee, F. H., 486
 Albers-Schönberg, 56, 391
 Alexandroff, F. A., 609
 Allen, C. W., 645
 Allen, L. W., 404
 Allison, N., 367
 Amunategui, G., 587
 André, 304
 Andrews, H. R., 57
 Arcelin, 76, 523
 Aschner, B., 56
 Ashcraft, L. T., 303
 Auerbach, J., 87
 Austin, C. K., 626
 Aversenz, 410
 Axhausen, 585
 Baar, G., 522
 Babcock, W. W., 124, 344,
 522
 Bacon, C. S., 65
 Bainbridge, W. S., 132
 Balaban, I. A., 173
 Baldwin, J. F., 50, 352
 Balfour, D. C., 572
 Ball, C. F., 373
 Ballantyne, J. W., 631, 633
 Bamberg, K., 145
 Bar, L., 191
 Baradulin, G., 349
 Bárány, R., 6
 Barclay, A. E., 134
 Barfurth, W., 508
 Barker, L. F., 377
 Barnes, R. H., 21
 Barnett, N., 55
 Barr, A. S., 615
 Barratt, J. O. W., 527
 Barrett, C. W., 383
 Barthélemy, 232
 Basham, D. W., 245
 Basset, R., 175
 Basseta, 593
 Bassler, A., 360
 Bauereisen, A., 641
 Baur, J., 250
 Bayer, H., 628
 Bayer, R., 349
 Beck, C., 302
 Beck, E. G., 258, 605
 Beck, J. C., 310, 649
 Beck, S. C., 266
 Beckman, E. H., 128, 235,
 536
 Beckmann, W. G., 607
 Beer, E., 184, 188, 305, 636
 Belikoff-Schtomitsch, 635
 Bell, W. B., 390
 Bendixen, P. A., 472
 Benedek, L., 150
 Benthin, W., 396
 Berczeller, I., 157
 Berdez, 609
 Berg, P., 33
 Berkeley, C., 272
 Bernheim, B. M., 579
 Bernstein, H. S., 299
 Besley, F. A., 252
 Betke, 130
 Beuttner, 281
 Biener, L., 402
 Billings, F., 26, 479
 Billington, W., 182
 Bilsted, E., 515
 Bize, 519
 Björkenheim, E. A., 386,
 398
 Blackford, J. M., 350, 460
 Blaisdell, F. E., 162
 Blaizot, 646
 Blakeway, H., 651
 Blanchard, 489
 Bland-Sutton, J., 281
 Blaxland, A. J., 252
 Bloodgood, J. C., 266, 372,
 531
 Blum, F., 8
 Blything, J. D., 472
 Boas, H., 603
 Boerma, N. J. A. F., 293
 Boggs, T. R., 419
 Böhn, M., 33
 Boije, 275
 Boland, F. K., 182
 Bondi, J., 633
 Bondy, O., 270, 288
 Boni, A., 273, 288
 Bonn, H. K., 185
 Bonney, V., 272
 Boorstein, S. W., 475
 Boothby, W. M., 1
 Borst, M., 151
 Bosman-de Kat Angelino,
 I., 401
 Bossi, L. M., 47
 Braasch, W. F., 70, 181,
 636
 Braislin, W. C., 648
 Braizew, W. R., 74
 Brandt, 52
 Brandweiner, 153
 Bratton, H. O., 72
 Braude, J., 632
 Braun, H., 230
 Braunstein, A., 377
 Bredin, W. W., 524
 Brehm, O., 257
 Breitstein, L. I., 614
 Brem, W. V., 495
 Brewer, G. E., 533, 405
 Brickner, W. M., 486
 Bridoux, H., 414
 Broca, A., 39, 519
 Brooke, B., 367
 Broun, L., 157
 Brown, C. P., 366
 Brown, W. L., 366
 Bruns, H. D., 84
 Bryan, R. C., 644
 Buckley, P., 23
 Buerger, L., 642
 Bugbee, H. G., 643
 Bulkley, K., 415, 478
 Bunting, C. H., 604
 Burckhard, G., 607
 Burckhardt, H., 130
 Burdenko, N., 376
 Burnham, A. C., 363
 Butner, A. J., 511
 Byford, H. T., 505
 Cabot, H., 417
 Cabot, S., 42
 Cadenat, 129
 Callison, J. G., 347
 Calmann, A., 386
 Calot, 595
 Calve, J., 147, 492
 Canavan, M. M., 155
 Candela y Plá, M., 158
 Cantas, M., 488
 Cantoni, V., 49
 Capelle, W., 349
 Caraven, J., 272
 Carman, R. D., 355
 Caron, M., 185
 Carr, W. P., 148
 Carrel, A., 37
 Carstens, J. H., 277, 282
 Carter, W. W., 650
 Case, J. T., 22, 243, 356,
 581
 Caspary, 41
 Casper, L., 70
 Casselberry, W. E., 312
 Castaigne, 603
 Cathcart, E. P., 345
 Caulk, J. R., 301, 407
 Chapin, H. D., 134
 Chaput, 166
 Chase, W. B., 50
 Chastenet de Guéry, M., 17
 Chatterton, E., 529
 Chenhall, W. T., 59
 Cheron, H., 608
 Childe, C. P., 51, 161
 Childs, S. B., 69
 Cholekowsky, A. M., 620
 Christian, H. A., 75
 Christiani, A., 174
 Churchman, J. W., 376
 Claiborne, J. H., 528
 Claridge, G. P. C., 252
 Clark, G. H., 345, 457
 Clark, J. G., 509
 Clendening, L., 155
 Clivio, I., 287
 Clogg, H. S., 353
 Coats, G., 189
 Coburn, R. C., 124
 Cocks, G. H., 89, 420
 Codman, E. A., 137, 643
 Coerr, F. H., 598
 Cokenower, J. W., 141
 Cole, L. G., 17, 533, 578,
 583
 Collins, C. N., 137
 Colliver, J. A., 262
 Colvin, A. R., 482
 Conklin, C. B., 492
 Cooley, T. B., 154
 Cooper, R. H., 415
 Cope, V. Z., 471
 Corbett, J. F., 360
 Cramer, H., 517, 611
 Crane, A. W., 462
 Credé, B., 577
 Credé-Hörder, C. A., 84
 Crile, G. W., 164, 533
 Cross, A. E., 647
 Crossen, H. S., 275, 396
 Crotti, A., 604
 Cruveilhier, L., 305
 Cubbins, W. R., 6
 Cullen, E. K., 392
 Cumberbatch, E. P., 270
 Cumston, C. G., 417, 600
 Cunningham, A. T. R., 520
 Cuny, F., 628
 Curtis, 48
 Curtis, A. H., 625
 Czerny, V., 156
 Czyborra, A., 502
 Dabney, S. G., 649
 Dabney, V., 650
 Da Costa, J. C., 574
 Dalencon, R., 637
 Daniel, C., 56
 Danis, R., 457
 Dannreuther, W. T., 506
 Darling, C. G., 420
 Dartigues, L., 274
 Daude, O., 507
 Davies, D. L., 529
 Davies, T. F., 14
 Davis, A. B., 395
 Davis, C. B., 251, 591
 Davis, C. H., 66
 Davis, D. J., 26
 Davis, E. C., 395
 Davis, G. G., 369, 489
 Davis, H. J., 88
 Davis, T. G., 187
 Davis, T. M., 407
 Day, E. W., 311
 Dean, J. M., 504

- Dean, L. W., 313, 651
 Deaver, J. B., 358
 Debrez, L., 251
 De Garmo, W. B., 240
 Degrais, 524
 De Keating-Hart, 149
 Delapchier, R., 492
 De Lee, J. B., 176
 Delore, 458
 Dench, E. B., 86, 190
 Denk, W., 11
 Dennis, F. L., 89
 Dennis, W. A., 366
 Depage, 249, 457
 Desnos, E., 81
 Despard, D. L., 13
 Dibernardo, A. L., 495
 Dickinson, R. L., 176
 Diefenbach, W. H., 500
 Dieterichs, M., 471
 Diwawin, L. A., 3
 Djedoff, W. P., 615
 Donaldson, H. J., 2
 Donaldson, H. R., 504
 Donaldson, M., 398
 Donnell, R. E., 402
 Döptner, 603
 Dorrance, G. M., 642
 Dreesmann, H., 14
 Drueck, C. J., 510
 Duff, D., 511
 Duffek, K., 510
 Dufourt, P., 37
 Dührssen, A., 627
 Dujarier, C., 364
 Dutrow, H. V., 530
 Dutton, T., 27
 Duval, P., 248
 Dyrenfurth, F., 49
 Eckelt, K., 393
 Eden, R., 575
 Einhorn, M., 356
 Eisendrath, D. N., 246, 302
 Ekler, R., 615
 Elmslie, R. C., 27
 Eloesser, L., 368
 Els, H., 480
 Elsberg, C. A., 34, 458
 Ely, L. W., 25, 141, 361
 Emerson, L. E., 346
 Engelhorn, E., 66
 Engelmann, F., 394
 Engström, O., 382
 Eppinger, H., 583
 Erdheim, S., 518
 Erdmann, J. F., 23, 139, 241
 Erving, W. G., 145
 Esch, P., 627
 Essen-Möller, E., 61, 394
 Eustace, A. B., 615
 Eusterman, G. B., 240, 468
 Evler, 507
 Ewing, E. M., 601
 Fabre, 278
 Fairise, 232
 Falk, E., 58
 Fallon, M. F., 139
 Farr, C. E., 414
 Farrant, R., 232
 Farrar, L. K., 276
 Farrell, B. P., 261
 Fasset, F. J., 146
 Faure, J. L., 46
 Faveret, P., 589
 Fay, O. J., 255
 Federspiel, M. N., 424
 Fehér, A., 253
 Fellner, O. O., 618
 Fenton, F., 168
 Ferguson, R. T., 166
 Ferreri, G., 422
 Fetzner, M., 517
 Finsterer, H., 127
 Firth, J. L., 184
 Fischer, E., 28
 Fischer, M., 132
 Fitz, R., 75
 Fitzwilliams, D. C. L., 475
 Fleischhauer, 55
 Fodor, A., 517
 Foges, A., 402
 Folliot, H. H., 629
 Forbes, A. M., 32
 Forssman, J., 72
 Foster, N. B., 183, 600
 Foulkrod, C., 294
 Fowler, H. A., 521
 Fowler, O. S., 634
 Fraenkel, E., 13
 Fraenkel, L., 517
 Fraenkel, M., 616
 Francois, R., 519
 Francois, 603
 Frank, 21
 Frank, L., 229
 Fränkel, L., 520
 Frazier, C. H., 232, 401
 Fredet, P., 364
 Freeland, J. R., 627
 Freeman, L., 30, 234
 Freund, H., 384
 Freund, L., 606
 Freyer, P. J., 644
 Friedman, J. C., 37
 Fromme, F., 389
 Frühwald, R., 606
 Fründ, H., 361
 Fuchs, A., 67
 Fuchs, H., 401
 Fühner, H., 7
 Fulci, F., 632
 Fuller, E., 142
 Fulton, J. A., 414
 Gadd, P., 4
 Gaillard, A. T., 646
 Gallie, W. E., 474
 Gammeltoft, 160
 Gardner, J. A., 527
 Garraro, N., 527
 Gatellier, J., 259
 Gaudier, 424
 Gayet, 644
 Gayler, W. C., 630
 Geist, E. S., 369
 Geist, S. H., 383
 Gellhorn, G., 125, 393
 Genter, H., 512
 George, A. W., 138
 Geraghty, J. T., 73, 403
 Gerard, M., 638
 Gerber, I., 138
 Ghoreyeb, A. A., 236
 Gibbes, J. H., 377
 Gibson, J. D., 379
 Giertz, K. H., 599
 Gilbert, H., 516
 Giles, A. E., 384, 611
 Gillette, A. J., 480
 Gizelt, A., 164
 Gleason, E. B., 423
 Glenn, E. B., 586
 Gliński, L. K., 512
 Goby, P., 378
 Goetze, O., 38
 Golant, A. J., 263
 Goldbach, L. J., 647
 Goldberger, M. F., 65
 Goldstine, M. T., 64
 Goldstrom, M., 397
 Goldzieher, M., 8
 Good, F. L., 61
 Goodman, A. L., 643
 Gosset, A., 234
 Götjes, H., 13
 Gougerot, H., 191
 Gouriou, P., 639
 Gözony, L., 374
 Gradinescu, A. V., 69
 Gradle, H. S., 189
 Graef, W., 599
 Graves, W. P., 285
 Green, N. W., 576
 Greife, H., 49
 Grey, E. G., 346
 Gröne, O., 64
 Gros, E., 352
 Groves, E. W. H., 30
 Grusdeff, W. S., 511
 Grützner, R., 8
 Guibe, M., 245
 Gussew, V., 239
 Guthrie, C. G., 419
 Haendly, P., 380, 383
 Haenisch, 631
 Hahl, C., 41
 Hahn, B., 352
 Haines, W. D., 270
 Hall, J. N., 16
 Halle, N., 405
 Haller, 475
 Halpern, 153
 Hamann, C. A., 535
 Hamburger, W. W., 37
 Hammond, 478
 Hancock, J. C., 239
 Hansell, H. F., 529
 Hansen, T. B., 48
 Hanser, R., 268
 Harabath, R., 513
 Harman, N. B., 529
 Harrar, J. A., 290, 623
 Harris, C. H., 260
 Harris, J. R., 491
 Harris, S. H., 612
 Harris, T., 85
 Harrower, D., 83
 Hart, D. B., 180
 Hartmann, 51
 Hartmann, H., 538
 Hartmann, I. P., 58
 Hartmann, J., 577
 Hartwell, J. A., 19
 Haudek, M., 29
 Haultain, F. W. N., 48
 Hauser, H., 619
 Hausmann, T., 579
 Hawes, J. B., 187
 Hawley, G. W., 27
 Hayes, M. R. J., 249
 Haynes, I. S., 5
 Hazelhurst, F., 230
 Heaney, N. S., 66
 Heath, O., 413
 Heiden, K., 509
 Heil, K., 287
 Heineke, H., 143
 Heinrichsdorff, P., 170
 Heinrichs, G., 62
 Heinsius, F., 59
 Heitz-Boyer, M., 630
 Henderson, F., 572
 Henderson, Y., 3, 38
 Henschen, K., 12, 292
 Herb, I. C., 1
 Héresco, P., 77
 Hertz, A. F., 135
 Hertzler, A. E., 150
 Herz, E., 623
 Herzberg, E., 590
 Herzfeld, B., 157
 Herzog, H., 391
 Hesse, F. A., 31
 Heyn, A., 178
 Heynemann, T., 294, 402, 518
 Hicks, P., 406
 Hilse, A., 603
 Hinman, F., 307
 Hinselmann, H., 295
 Hirano, T., 577
 Hirsch, J., 506
 Hirst, B. C., 169
 Hirst, B. D., 176
 Hitschmann, F., 503
 Hitzrot, J. M., 366
 Hoch, O., 153
 Hofer, G., 530
 Hofstätter, R., 296
 Hohlweg, H., 73
 Holden, F. C., 385
 Holding, A. F., 606
 Holzapfel, K., 387
 Horwitz, R. E., 619
 Hosmer, A. J., 360
 Huffman, O. V., 392
 Hugo, E. W., 149
 Hulschinsky, K., 145
 Hull, A. J., 133
 Hunkin, 494
 Huntington, J. L., 289, 633
 Huntington, T. W., 527
 Hurwitz, S. H., 25
 Hussey, A., 394
 Ilkewitsch, W. J., 398
 Ingraham, C. B., 399
 Issel, E., 180
 Jackson, C., 124
 Jacobs, C. M., 141

- Jahnel, F., 625
Janeway, H. H., 135, 229, 601
Jansen, M., 594
Jardine, R., 175, 515
Jaschke, R. T., 504
Jayle, F., 283
Johnston, R. H., 650
Jonas, W., 295
Jones, D. F., 248
Jones, D. W. C., 586
Jones, E. O., 233
Jones, R., 363
Jordan, J. F., 177
Jørgensen, G., 292
Judd, E. S., 304, 461
Jüngling, O., 1
Kaarsberg, I., 160
Kahn, L. M., 20
Kaliski, D. J., 375
Kalmanowitsch, F., 178
Kanavel, A. B., 244
Kapsammer, G., 70
Karsner, H. T., 236
KastanaJeff, G. M., 166
Kawamura, K., 241
Kawasoye, 584
Kayser, 160
Keene, F. E., 509
Keep, C., 162
Kehrer, E., 179, 292
Keitler, H., 608
Kelen, B., 501
Keller, F., 512
Keller, R., 623
Kelley, H. A., 382
Kemp, D. C., 63
Kerr, H. H., 137
Keyes, Jr., E. L., 185, 635
Kidd, F., 77, 418, 408
Kienböck, R., 44
Kimpton, A. R., 269
King, A. F. A., 47
King, H. M., 9
Kirmisson, 258
Kirschner, M., 371
Kjølseth, M., 291
Kleemann, E., 573
Kleiner, I. S., 78
Klemm, P., 253
Klotz, M., 632
Klotz, R., 47
Knaggs, R. L., 18
Knapp, A., 83
Koch, J. A., 389
Koehler, H., 1
Kolb, K., 235, 495, 579
Kolischer, G., 524
Komarowsky, M., 40
Koplik, 179
Kopylow, N. W., 24
Kostanecki, K., 246
Kosmak, G. W., 507
Kraus, F., 348, 600
Krauze, L., 612
Kretschmer, H. L., 300
Kreuzfuchs, S., 510
Kringel, O., 467
Kron, N. M., 9
Kröner, M., 63
Krönig, 610
Krotoszyner, M., 299, 301
Krukenberg, R., 520
Kukoh, 282
Küster, H., 297, 616
La Grange, 84
Lambert, A. V. S., 464, 600
Landmann, K., 577
Landon, L. H., 428
Landsberg, E., 168
Lane, W. A., 247
Lange, S., 378, 467
Lapham, M. E., 234
Lardennois, G., 582
Lastotschkin, J. P., 4
Latarjet, 597
La Torre, 297
Latzko, W., 381
Law, A. A., 35
Lebedeff, G. I., 577
Lebedew, A. A., 22
Le Calvé, J., 375
Legueu, 644
Leidenius, L., 630
Leighton, A. P., 626
Lejars, 298
Le Jemtel, 590
Leland, G. A., 423
Lelièvre, H., 147, 492
Lemoine, G., 78
Lenormant, C., 275
Leo, W., 593
Leonard, V. N., 46, 387
Lepage, 170
Leporski, M. J., 463
Lerda, G., 616
Leriche, R., 37, 135, 265
Lepinasse, V. D., 305
Less, 287
Leszynsky, W. M., 597
Levin, I., 149
Levy, R., 422
Le Wald, L. T., 131
Lewis, D. D., 251, 591
Lewis, W. H., 575
Lichtenstein, 66
Leigner, B., 271
Lilienthal, H., 423, 537
Lindemann, W., 170
Linkenkeld, J., 252
Linzenmeier, G., 295
Lippens, 181, 370
Lisowskaja, S., 482
Lizcano, P., 162
Little, E. M., 261
Lloyd, J. H., 232
Lockwood, C. D., 241
Loeb, V., 313
Löfqvist, R., 296
Löliger, E., 621
Loos, O., 128
Lord, J. P., 146
Lorenz, A., 144
Lorin, 76
Lothrop, H. A., 537
Lothrop, O. A., 190
Loudon, J., 345
Lovett, R. W., 488
Lower, W. E., 77, 523, 645
Lowman, C. L., 593
Lucksch, F., 69
Ludwig, F., 163, 515
Luetscher, J. A., 523
Luger, A., 7
Luzoir, J., 635
Lynch, F. W., 60
Lynch, R. C., 309
MacFarlan, D., 498, 650
MacGowan, G., 305
MacKee, G. M., 44
Mackenrodt, A., 410
MacKenty, J. E., 347
MacKenzie, A. J., 536
MacKenzie, G. W., 87, 650
Magnus, 27
Magruder, E. P., 368, 481
Mall, F. P., 392
Mamcurian, M., 612
Mann, 624
Mann, R. W., 345
Mapes, C. C., 611
Maragliano, D., 267
Margot, A. J., 401
Margoulies, 521
Marie, M. P., 459
Marine, D., 460
Marion, 644
Marion, G., 306, 639
Marquis, 592
Marshall, H. W., 490
Martin, A., 55
Martin, C. F., 358
Martin, E., 535
Martin, E. D., 363
Martin, F. H., 159
Martin, I. A. M., 142
Marx, H., 6
Massaglia, A., 287
Massenbacher, J., 598
Massini, R., 497
Masson, P., 234
Mattisohn, 163
Maurer, A., 278
Mayer, 249
Mayer, A., 67, 173, 296
Mayer, E., 504
Mayer, L., 368, 596
Mayet, 492
Maynard, F. P., 529
Mayo, C. H., 154, 251, 348, 536, 582
Mayo, W. J., 469, 521, 531
McAllister, V. J., 52
McCarthy, J. F., 81
McCurdy, S. L., 312
McDill, J. R., 238
McDonald, S., 640
McGlannan, A., 642
McGlinn, J. A., 609
McGrath, B. F., 126
McIlhenny, P. A., 490
McKenzie, D., 89, 191
McKinney, R., 310
Mc Nealy, R. W., 615
McPherson, R., 395
McWilliams, C. A., 486, 589
Meisenbach, R. O., 591, 594
Melchior, E., 243
Mencke, J. B., 587
Mendes de Leon, M. A., 613
Méné, E., 473
Merle, P., 272
Meyer, E., 627
Meyer, L., 275
Meyer, R., 293, 511
Meyer, W., 11, 465, 576
Michel, P., 485
Midelton, W. J., 142
Mignon, M., 86
Miller, A. G., 185, 416
Miller, R. T., Jr., 133
Miller, R. W., 309
Mills, C. W., 9
Mills, E. P., 146
Millspaugh, W. P., 11
Minakuchi, K., 390
Mirotworzeff, S. R., 496
Mitchell, A. P., 496
Mitchell, J. F., 3
M'Neil, C., 461
Molinari, 126
Müller, O., 161
Müllers, B., 256
Monrad, S., 136
Montgomery, E. E., 160
Moore, 409
Moore, J. E., 360
Moorehead, J. J., 484
Morel, 644
Moriarta, D. C., 53
Morley, J., 362
Morse, J. L., 134
Morton, H. H., 527
Morton, R., 498
Mosher, G. C., 289
Moskaleff, M. N., 299
Mullen, J., 647
Müller, 128
Müller, A., 175
Müller, G. P., 128
Müllerheim, R., 359
Murard, J., 406, 634
Muret, M., 388
Murphy, F. T., 535
Murphy, J. B., 5, 9, 29, 36, 495
Musgrave, W. E., 373
Mussatow, N. A., 509
Mutel, 474
Myer, J. S., 240
Myers, D. W., 647
Nacke, 287
Nagel, 290
Nagel, W., 167
Nagy, T., 518
Nasaroff, W. M., 41
Naumann, 631
Nebesky, O., 614, 629
Neel, J. C., 382
Neu, M., 512
Neumann, H., 172
Neumann, J., 517
Nicholson, W. R., 626
Nicolle, C., 646
Niklas, F., 296
Niosi, F., 257
Noland, L., 154
Norbury, L. E. C., 357
Norris, R. C., 60
Norton, W. A., 487
Novak, J., 585, 620, 625

- Nové-Josserand, 485
 Nové-Josserand, G., 584
 Nowikoff, A., 53
 Noyes, M. L., 312
 Nutt, J. J., 264
 Oberst, A., 477
 Obolensky, N. A., 619
 Ochsner, A. J., 354
 Ogilvy, C., 262
 Ohman, K. H., 48
 Okinczyc, J., 582
 Oliver, J., 376
 Olivier, 53
 Ollerenshaw, R., 35
 Olow, J., 51
 Ombrédanne, 186
 O'Neil, R. F., 187
 Opitz, 65
 Opitz, E., 43, 285
 Oppenheim, H., 595
 Oppenheimer, S., 649
 Oppikofer, E., 88
 Orr, H. W., 142
 Osgood, 486
 Osgood, R. B., 367
 Ossokin, N. E., 459
 Ostrum, L., 423
 Ottenberg, R., 375
 Oui, 48
 Oulesko-Strogonoff, 386
 Outerbridge, G. W., 286,
 386
 Owen, S. A., 25
 Paddock, C. E., 59
 Page, J. R., 86
 Paine, A. K., 630
 Pampanini, G., 284
 Pankow, 173
 Pannett, D. A., 353
 Pantzer, H. O., 244
 Paoli, C., 641
 Paramore, R. H., 180
 Parham, F. W., 54, 363
 Parker, C. A., 262
 Pasteau, O., 524
 Patek, R., 62
 Patel, 53
 Pauron, 603
 Pearce, R. M., 374
 Peck, C. H., 2
 Peckham, 481
 Peham, 621
 Peltesohn, S., 264
 Percy, J. F., 253, 266
 Perekropoff, A. J., 370
 Perimoff, W. A., 487
 Peritz, G., 7
 Perrin, 73
 Perrin, M., 586
 Péterfi, T., 632
 Petö, E., 383
 Petroff, N. N., 259, 602
 Pfahler, G. E., 499
 Phillips, T. B., 609
 Phillips, C. E., 589
 Picker, R., 79
 Picque, R., 476
 Pierce, N. H., 421
 Pilcher, P. M., 298, 304
 Pincus, F., 289
 Pirie, A. H., 42
 Pischel, K., 189
 Plaggemeyer, H. W., 403
 Plondke, F. J., 344
 Poensgen, F., 235
 Polak, J. O., 161, 397
 Poljenoff, A., 260
 Pollosson, A., 282
 Ponfick, W., 174
 Popielski, L., 67
 Porcelier, A., 244
 Porchownik, J. B., 391
 Porges, O., 585, 625
 Porter, M. F., 282
 Post, W. E., 635
 Potel, G., 492
 Potherat, 464
 Pousson, A., 81
 Powers, C. A., 533
 Pozsonyi, E., 509
 Pratt, J. A., 422
 Prendergast, D. A., 420
 Proust, R., 278
 Puech, P., 385, 513
 Puppel, E., 164
 Pussep, L. M., 231, 493
 Quain, E. P., 237
 Quellien, P., 191
 Quénu, E., 259
 Quimby, A. J., 138
 Raab, H., 273
 Rachmanoff, A. N., 169
 Ramsbottom, A., 134
 Randall, A., 305
 Ransohoff, J., 361
 Ranzi, E., 345, 380
 Rau, E., 649
 Recasens, S., 171, 621
 Redlich, 284
 Rehfuß, M. E., 352
 Rehn, E., 487
 Reichelderfer, L. H., 353
 Reik, H. O., 85
 Rendu, A., 485
 Reschke, K., 267
 Reynolds, E., 179, 507
 Rich, E. A., 261
 Richter, H. M., 470
 Ricketts, R. M., 290
 Ridlon, J., 254
 Riehl, G., 499
 Ries, E., 157, 385
 Rissmann, P., 505
 Rixford, E., 28
 Roberts, E. J., 45
 Roberts, W. H., 650
 Robertson, A. N., 423
 Robertson, D. E., 474
 Robinson, W., 481
 Rochet, 410, 597
 Rochet, V., 527
 Rockwood, H. L., 419
 Rodman, W. L., 578
 Roe, J. O., 530
 Rohrbach, W., 167
 Rollett, H., 46
 Rollier, A., 256
 Rongy, A. J., 514
 Rosenbloom, J., 346
 Rosenau, E. C., 479
 Rosenow, E. C., 354
 Rosenblatt, J., 521
 Roth, O., 143
 Roth, R. E., 492
 Rothe, H., 54
 Rotter, J., 472
 Rous, P., 495
 Roussy, G., 150
 Rouvier, I., 397
 Rovsing, T., 144
 Rowntree, L. G., 74
 Rubaschow, S., 81
 Rubens-Duval, 298, 608
 Rubin, I. C., 271
 Rübsamen, W., 624
 Rupert, R. R., 298
 Rupprecht, 71
 Rush, J. O., 417
 Ryerson, E. W., 260, 491
 Sanger, H., 178
 Samuels, J., 519
 Sanes, 159
 Sanford, A. H., 350, 460
 Sanford, H. L., 419
 Santy, 458
 Sasaki, J., 21, 80
 Sattler, R., 400
 Saussailoff, M., 229
 Schäfer, A., 642
 Schäfer, P., 295
 Schanz, A., 34
 Scharetsky, B. G., 466
 Schauta, F., 608
 Scherer, A., 63, 170, 501
 512
 Schickele, G., 506, 509
 Schiff, E., 66
 Schindler, O., 500
 Schlapoberski, J., 289
 Schlayer, 173
 Schley, W. S., 133
 Schlimpert, H., 180
 Schloffer, H., 306
 Schmid, H. H., 520
 Schmidt, J. E., 573
 Schmidt, O., 167, 285
 Schmitz, H., 276
 Schnoor, E. W., 246
 Scholz, B., 10
 Scholz, H., 631
 Schottlaender, J., 274
 Schottmüller, H., 508
 Schröder, H., 297
 Schröder, R., 618
 Schubert, G., 21
 Schüller, A., 8
 Schüller, H., 380, 381
 Schultz, T., 55
 Schwarz, E., 588
 Schwarzmann, E., 466
 Schwarzwaller, 289
 Schweitzer, B., 516
 Scipades, E., 62, 171
 Scott, S. G., 384, 408
 Scudder, C. L., 134
 Seedorff, M., 160
 Seelig, M. G., 466
 Segale, C., 478
 Segura, E. V., 236
 Seidel, 144
 Seidel, H., 252
 Seitz, L., 392
 Selenowsky, 84
 Sellheim, H., 60, 254, 287,
 515
 Senior, H. D., 131
 Sever, J. W., 14
 Shambaugh, G. E., 85
 Sharpe, W., 261
 Shattuck, G. C., 40
 Shaw, H. B., 415
 Sheedy, B. D., 88
 Sheen, W., 589
 Sheldon, R. F., 643
 Sherman, H. M., 483
 Sherren, J., 15
 Shoop, F. J., 498
 Sick, C., 13
 Sievert, C., 174
 Sigwart, W., 505, 613
 Simpson, B. T., 527
 Sinclair, J. F., 616
 Singley, J. D., 262
 Sison, A. G., 373
 Skillern, Jr., P. G., 253
 Skillern, R. H., 230
 Skinner, E. H., 28, 140,
 588
 Sluder, G., 88, 312
 Smith, G. G., 616
 Smith, O. C., 598
 Smith, R. R., 58
 Smithies, F., 242
 Snell, A. C., 420
 Solowij, A., 523, 629
 Somers, 186
 Somers, G. B., 162
 Sonnenburg, E., 580
 Southard, E. E., 155
 Souttar, H. S., 174
 Spalding, A. B., 68
 Spiegel, N., 484
 Sparmann, R., 380
 Spisharnij, J. K., 265
 Spitzer, W. M., 69
 Squier, J. B., 186, 418
 Ssokoloff, I. A., 604
 Stark, J. N., 50
 Starkey, F. R., 82
 Steadman, F. St. J., 90
 Steffek, P., 619
 Steidl, K., 387
 Steinharter, E. C., 469
 Stephan, S., 397
 Stephenson, S., 529
 Stetten, D., 346
 Stevens, 300
 Stevenson, E. S., 141
 Stewart, 153
 Stich, R., 267
 Sticker, A., 381
 Stockton, C. G., 355, 358
 Stoeckel, 295, 393
 Stoecklin, W., 587
 Stoffel, A., 32, 489, 591
 Stoffel, E., 32
 Stokes, A. C., 413
 Stone, H. B., 579
 Stover, G. H., 17
 Strauch, F. W., 148

- Strisower, R., 625
 Stroganoff, W., 61
 Stucky, J. A., 649
 Stucky, W. S., 649
 Stutz, G., 172
 Sugi, K., 503
 Sugimoto, T., 607
 Summers, J. E., 534
 Sunde, A., 295
 Sussmann, R., 309
 Swain, J., 183
 Sweeney, M. T., 34
 Syring, 480
 Sym, W. G., 189
 Szabó, D., 626
 Tanberg, A., 351
 Taylor, H. L., 362
 Telitschenko, E., 229
 Temoin, 250
 Ten Broeck, L. L., 497
 Terrell, E. H., 473
 Teske, 12
 Teuffel, R., 373
 Teuji, H., 27
 Thévenot, 644
 Thévenot, L., 527
 Thierry, H., 518
 Thomä, F., 164
 Thomas, E., 180
 Thomas, G. F., 10
 Thomas, G. J., 404
 Thomas, T. T., 483
 Thomas, W. S., 459
 Thompson, J. E., 582
 Thomson, J. W., 158
 Tobey, G. L., 420
 Tomlin, W. S., 647
 Torek, F., 237
 Touraine, 603
 Tourneau, 168
 Trethowan, W., 60
 Tscherniachowski, E., 40
 Tscherniak, M., 147
 Tucker, B. R., 400
 Tuffier, 256
 Tuholske, L., 466
 Turck, R. C., 127, 356
 Turner, W. G., 147
 Tuszkai, 169
 Tweedy, E. H., 617
 Tyler, A. F., 586
 Ulrich, J., 127
 Unterberger, F., 286
 Unger, E., 465
 Van Duyn, E. S., 484
 Van Lennep, W. B., 470
 Valentin, B., 148
 Vander Veer, J. N., 78
 Van Teutem, E. A., 613
 Van Tussenbroek, C., 632
 Vanverts, J., 385, 513
 Vaughan, J. W., 268
 Vaughan, R. T., 254
 Veauveau, 492
 Veit, J., 66, 239
 Venable, C. S., 369
 Venot, H., 244
 Varaldo, F. R., 506
 Verhoogen, J., 12
 Vertes, O., 626
 Vidakovich, C., 182
 Vignolo, G., 247
 Villard, 73
 Vincent, W. G., 407
 Violet, H., 282
 Voegtlin, C., 374
 Vogel, F., 163
 Vogt, E., 52, 291, 293
 Von Dungern, 153
 Von Eiselsberg, A., 345
 Von Engelmann, G., 416
 Von Franqué, O., 389, 622
 Von Fürth, O., 151
 Von Gutfeld, F., 65
 Von Haberer, 461
 Von Hansemann, D., 501
 Von Herten, V., 284
 Von Heuss, R., 375
 Von Lingen, L., 158
 Von Manteuffel, 258
 Von Mihalkovics, 288
 Von Radwanska, W., 51
 Von Reding, A., 63
 Von Ruck, K., 153
 Von Schrenck, A., 286
 Von Tappeiner, F. H., 31
 Von Wagner, J., 233
 Von Winiwarter, A. F. R., 607
 Voorhees, I. W., 87
 Vuillet, H., 4
 Wade, H. A., 283
 Wade, H. W., 359
 Waeber, A., 289
 Wagner, G. A., 474
 Waldstein, E., 399
 Waljaschko, G. A., 22
 Walker, J. W. T., 408
 Walkup, J. O., 634
 Wallart, J., 162
 Walton, A. J., 602
 Ward, C., 58
 Ward, F. N., 513
 Ware, M. W., 636
 Warfield, L. M., 631
 Warthin, A. S., 293
 Watkins, T. J., 64, 159
 Watson, B. P., 67
 Weber, F., 13
 Wegelins, W., 47
 Wegner, A., 168
 Weibel, 502
 Weibel, W., 158
 Weidenbaum, G., 64
 Weil, S., 133, 587
 Weise, F., 624
 Weishaupt, E., 13
 Weiss, 588
 Weiss, E. A., 503
 Weiss, K., 25
 Weitzel, F., 379
 Welch, J. E., 201
 Wenckebach, K. F., 131
 Werner, P., 514
 Wertheim, 271
 Westermark, 51
 Whipple, G. H., 140, 579
 Whitbeck, B. H., 33
 White, G. R., 138
 Whitehouse, B., 277
 Whiting, F., 310
 Whitman, R., 369
 Whittemore, W. S., 40
 Widerøe, S., 270
 Wiener, S., 389
 Wiese, F. W., 384
 Wildbolz, H., 71
 Wilensky, A. O., 584
 Wilkie, D. P. D., 19
 Williams, W. W., 399
 Williamson, H., 294
 Wilson, A. C., 306
 Wilson, L. B., 349, 460, 574
 Winn, J. F., 400
 Winter, 514
 Wise, W. D., 16
 Wolbarst, A. L., 79
 Wolff, B., 398
 Wolff, M., 54
 Wolfsohn, G., 268
 Wood, J. W., 530
 Worthington, T. C., 230
 Wrede, L., 10
 Wyler, J. S., 189
 Yates, J. L., 604
 Ylppö, A., 633
 Yorke, W., 527
 Young, 482
 Young, Jr., E. L., 74
 Young, H. H., 80, 303
 Zade, M., 83
 Zander, P., 472
 Zazkin, A. E., 176
 Zentmayer, W., 83
 Zickel, G., 385
 Zobel, A. J., 22
 Zollinger, F., 72
 Zweifel, 356
 Zweifel, E., 572
 Zweifel, P., 516

INTERNATIONAL ABSTRACT OF SURGERY

JANUARY, 1914

ABSTRACTS OF CURRENT LITERATURE

GENERAL SURGERY

SURGICAL TECHNIQUE

ASEPTIC AND ANTISEPTIC SURGERY

Jüngling, O.: No Danger of Iodine Intoxication from Skin Disinfection with Tincture of Iodine (Bedingt die Methode der Hautdesinfektion mit Jodtinktur eine Gefahr der Jodintoxikation für den operierenden Arzt). *München. med. Wchnschr.*, 1913, lx, 1766.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

In spite of the comparative heaviness of iodine the iodine content of the air of the operating room is greatest over the field of operation. During five hours at the operating table the surgeon breathes in about $\frac{1}{2}$ mg. of iodine. Examination of the blood, however, showed that there was no increase in the lymphocytes or other change in the blood picture and, therefore, the conclusion is that iodine disinfection is without danger.

PAETZOLD.

Koehler, H.: Disinfection of the Field of Operation with Thymol Alcohol (Desinfektion des Operationsfeldes mit Thymolalkohol). *Deutsche militär. Ztschr.*, Berl., 1913, xlii, 619.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Disinfection with thymol alcohol, as suggested by King, has the following advantages over that with tincture of iodine: 1. The skin irritation is less. 2. In goiter and Basedow's disease the possibility of iodine absorption is avoided. 3. There is no discoloration. 4. The clothing is not stained. 5. It is cheaper. 6. The solution as well as the crystals keep indefinitely. King's method is warmly commended.

COLLEY.

ANÆSTHETICS

Herb, I. C.: Administration of Alkaloids before Anæsthesia. *J. Am. M. Ass.*, 1913, lxi, 834.

By Surg., Gynec. & Obst.

Herb decries the routine use of fixed doses of morphine, scopolamine or atropine preliminary to

general anæsthesia, as an evidence of unsound and unscientific practice. On account of the danger involved, they should be employed only when an experienced anæsthetist is in charge of the case. But a good etherizer can, without such premedication, usually induce an anæsthesia gently, and carry it through smoothly, with little after-sickness. The advantages which have been claimed for the method are not enough to offset the risk involved in the depressant effect upon respiration and on renal function, the toxic effect on the central nervous system, the strong diminution of the secretions, and the general heightening of the toxic effect of the anæsthetic itself.

The only indication for their use, in the author's opinion, is in local analgesia. The contra-indications are as follows: In patients in whom the respiratory center is depressed or likely to become depressed through operative procedures; obstructive dyspnœa due to growth within or without the trachea, causing pressure, or exophthalmic goiter; in operations about the mouth or throat; in the case of debilitated or cachectic persons or those suffering with continued sepsis; in patients presenting any degree of stupor or those susceptible to morphine, in children and elderly people, and when untrained, inexperienced anæsthetists are administering the anæsthetic.

ALBERT EHRENFRIED.

Boothby, W. M.: Ether Percentages. *J. Am. M. Ass.*, 1913, lxi, 830.

By Surg., Gynec. & Obst.

Boothby confirms the determinations of Connell with the anæsthetometer that, without reference to age or physical condition, the inspired air must contain 30 per cent of ether vapor, by weight, to saturate the blood sufficiently for the induction of full surgical anæsthesia, and that, after relaxation, a 15 per cent vapor is strong enough to prevent diffusion outward from the tissues and to maintain the

requisite ether content of the blood. To allow of the general application of these findings, he proceeds to determine the percentages obtained experimentally with ordinary methods of etherization.

For vapor methods he uses air, a meter to measure off the volume of air per minute, a Wolfie bottle containing ether over which the air is passed to a gas balance adjusted to give the ether percentage. He finds that the faster the flow of air the lower the percentage of ether, which explains the difficulty and frequent impossibility of inducing anaesthesia by a vapor apparatus in a person of great lung capacity, with respiratory centers aroused by stimulants or nervous excitement. A much higher percentage of ether will be carried over if the ether bottle is immersed in a bath containing warm water (not higher than 95° F., the boiling point of ether), without affecting the temperature of the anaesthetic vapor delivered to the patient. The use of chloroform to reinforce the ether in a vapor apparatus is inadvisable, because a turn of the valve may send in a concentrated dose and cause death. If the ether is warmed, it is unnecessary to use chloroform, as a vapor of any desired strength may be obtained.

For the drop method with the open mask, he used an "artificial trachea," and found that with induction (30 per cent ether vapor) the temperature of the inspired mixture was 53.6° F.; after relaxation (19 per cent vapor) it rose to 73.4° F., and later, (15 per cent vapor) still higher. In alcoholics, ether apparently exerts greater excitatory power on the respiratory center than in non-alcoholics. Naturally a much greater quantity of ether is required to bring this larger volume up to the 30 per cent requisite for induction of anaesthesia. An expert anaesthetist will induce an anaesthesia rapidly and yet smoothly, without causing suffocation and accordingly deep breathing. The percentage may be increased by holding the hands in turn on the side of the mask so as to get greater vaporization from their warmth.

Boothby shows by calculation that loss of heat by the body due to warming the anaesthetic vapor within the air passages is negligible in comparison with the loss of heat from the body surfaces during an operation. Warming the anaesthetic vapor before inspiration is accordingly a futile procedure, and it is far more important to keep the body dry and warm.

ALBERT EHRENFRIED.

Peck, C. H.: Intratracheal Insufflation Anaesthesia (Meltzer-Auer); Report of a Series of Four Hundred and Twelve Cases. *J. Am. M. Ass.*, 1913, lxi, 839. By Surg., Gynec. & Obst.

This paper deals with the author's personal experience with intratracheal insufflation anaesthesia in a series of 412 cases, which included a great variety of conditions. His conclusions are:

1. Intratracheal insufflation has many advantages over other methods in certain classes of cases.

2. The difficulty of intubating and the necessity of first inducing full surgical anaesthesia makes it unsuitable for many short simple operations.

3. If properly done, it is absolutely safe and free from deleterious after-effects.

4. It is the ideal method for intrathoracic operations.

5. It greatly lessens operative shock: (a) through absolute relief of strain on the respiratory apparatus and circulatory and nervous systems, and (b) through the even, advantageous degree of the anaesthesia maintained. This is especially evident in aged and debilitated patients.

6. It prevents aspiration of mucus, saliva, or blood into the trachea and makes preliminary tracheotomy unnecessary in operations on the tongue, jaws, mouth, nose, and pharynx. It thus prevents aspiration pneumonia.

7. It is especially useful in operations about the head and neck and in awkward operations in general.

8. The degree of anaesthesia is under perfect control. Insufflation of pure air for the last few moments of the operation hastens the recovery of consciousness and minimizes the after-effects.

ALFRED H. NOEHREN.

Donaldson, H. J.: A Year's Experience with Spinal Anaesthesia. *Am. J. Surg.*, 1913, xxvii, 325.

By Surg., Gynec. & Obst.

A report of 234 cases of spinal anaesthesia (stovaine) in the abdominal service of Williamsport Hospital, covering 338 operations on pelvic organs, gall-bladder and ducts, hernia, varicocele, castration, rectal operations, splenectomy, intestinal operations, cesarean section, and amputation of thigh, in which the ages ranged from nine to eighty-five years, showed that in 219 of the cases the anaesthesia was complete, while in 15 either a second injection or a little ether was required, there being no objection whatever to ether with stovaine. In the incomplete cases explanations were sought, the following being thought plausible: foot of table being too elevated; the suggestiveness of odor from cauterizing; manipulations of adhesions to gall-bladder and diaphragm; rough handling of fixed uterus, &c. Thirty-four suffered from nausea and vomiting. This trouble almost always occurred a few minutes after administration, but it was of little consequence, and latterly was obviated somewhat by giving the patient a light breakfast shortly before operation. The patients were allowed to drink fluids during operation, but no talking was allowed. Nine cases are specifically mentioned as showing advantages in the method; of these, two were of profound shock, one had an exophthalmic goiter, and the others either kidney or heart diseases. There were three deaths, one, after completion of operation before leaving the room, but it was not thought to be due to stovaine as the condition had been bad (cesarean section), one (splenectomy) after three days, and one (thigh amputation for septicæ-

mia after two weeks. The author is positive that spinal anaesthesia is a big asset to the surgeon, even safer than ether. Blood pressure falls (an advantage to hæmostasis). He thinks time of operation is shortened by it and fails to understand the prejudice against it.

F. W. PINNEO.

Henderson, Y.: A Comparison of the Immediate and After Effects of Spinal and Local Analgesia with Those of Inhalational Anaesthesia, in Respect to Shock and Psychic Shock. *Tr. Internat. Cong. Med.*, Lond., 1913, Aug.

By Surg., Gynec. & Obst.

Shock may be caused by mental states, e. g., fear or anxiety, in much the same manner as it is caused by physical pain. In using local and spinal analgesia it is important that the mind also should be protected, unless the patient is of phlegmatic character or is ignorant of what is happening. In general anaesthesia, not only anxiety and the consciousness of pain are to be avoided, but also overstimulation of afferent nerves influencing the centers controlling vegetative functions, particularly respiration. Quiet breathing is a supreme desideratum. To attain it, local analgesia should, if necessary, be used to reinforce general anaesthesia, and *vice versa*. In this practical point, the writer agrees with Crile, although he finds that much of the theorizing with which Crile has surrounded his teachings lacks any demonstrated basis of fact.

A form of shock may be induced by unskillful methods of anaesthetization, particularly with ether. This does not consist, as Crile holds, in fatigue of nerve centers. It is due in part to the acapnia which results from excessive respiration and renders the patient prone to respiratory failure, and in part, to excessive adrenalin secretion predisposing the patient to cardiac fibrillation under chloroform, and also to other disturbances of general functions.

Experiments by the writer have shown that unskillful anaesthetization, particularly frequent variations in depth of anaesthesia, may render even a perfectly healthy subject liable to die suddenly under a dosage which would otherwise be borne with impunity. Rebreathing methods in nitrous oxide oxygen anaesthesia have demonstrated the advantage of preventing acapnia and even of inducing a slight hypercapnia. The oxygen used in the operating room should contain five to eight per cent of carbon dioxide as a stimulant to respiration.

Diwawin, L. A.: Pantopon-Scopolamine Anaesthesia and Its Combination with Local Anaesthesia (Zur Frage der Pantopon-Scopolamin-Narkose und deren Kombination mit örtlicher Anaesthesia). *Chirurgia*, 1913, xxxiv, 34.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

After an exhaustive study of the literature of the subject, the author reports 101 of his own cases of anaesthesia with pantopon-scopolamine. They are divided into 4 groups: (a) pantopon-scopolamine with local anaesthesia—79 cases, 36 of them being

appendectomies; (b) pure pantopon-scopolamine anaesthesia—4 cases; (c) pantopon-scopolamine anaesthesia with spinal anaesthesia—9 cases; (d) pantopon-scopolamine in combination with chloroform and ether—13 cases.

Doses of 0.002–0.03 gm. pantopon and 0.002–0.003 scopolamine are enough for women and delicate men; for robust men, 0.04 pantopon and 0.004 scopolamine. These doses must be exceeded only in exceptional cases. Injections of pantopon-scopolamine are a valuable aid in local anaesthesia and extend its field greatly. It is dangerous to induce complete anaesthesia with pantopon-scopolamine alone on account of its effect on the heart.

SCHAAK.

Mitchell, J. F.: Local Anaesthesia. *J. Am. M. Ass.*, 1913, lxi, 842.

By Surg., Gynec. & Obst.

The author presents a general review of the developments in local anaesthesia since the publication of his previous paper on this subject in 1907. The one greatest factor has been the introduction of novocaine as a substitute for cocaine. Novocaine is now recognized as the best and safest substance for producing local anaesthesia, as it is about seven times less toxic than cocaine and its solutions are unharmed by boiling. Urea and quinine hydrochlorid is another valuable local anaesthetic, with its practically negative toxicity, its control of post-operative bleeding, and the long duration of the anaesthesia that it produces.

A description is given of Bier's method of injecting novocaine into the vein of a limb between two tourniquets applied after the limb has been rendered bloodless by the application of an Esmarch bandage. Very good results from the use of this method are reported from Bier's clinic, but Mitchell believes that the discomfort of the tourniquet is often a considerable disadvantage.

The anaesthetization of distal parts by perineural and endoneural injection, which is rendered easy by a knowledge of sensory nerve distribution, is next taken up. Many authors are quoted who have used this method with success in such operations as amputations, perineal prostatectomies, vaginal hysterectomies, caesarean sections, appendicectomies, nephrectomies, thoracoplasties, laminectomies, and operations on the gall-bladder and stomach. The head has been a special field of investigation and even the injection of the gasserian ganglion has been detailed with mathematical accuracy. Resections of the jaw and excisions of the tongue have been performed by this method successfully and painlessly.

Novocaine has greatly improved the local anaesthesia of the neck and the use of it is surprisingly simple to one who has been accustomed to employing cocaine as sparingly as possible.

The now well-known work of Crile on shock and anaesthesia and his principle of anoci-association are considered of great value. His method of eliminating the traumatic factor should be used not only for handicapped patients, but also in daily routine

work. It is of special value in the surgery of the aged. In epithelioma of the lip, Mitchell first infiltrates the neck thoroughly with 0.5 per cent novocaine before he excises the growth. By the time this is finished, anaesthesia in the neck is so well established that the dissection can be done at will.

In the treatment of fractures the author has found the combined method most useful. In hernia cases he does not consider old age a contra-indication, and he performs all operations for hernia with local anaesthesia, except in the cases of very young children.

In closing, the author pleads for more experience and skill in the various methods, as without these local anaesthesia cannot be fairly judged.

ALFRED H. NOEHREN.

Lastotschkin, J. P.: Hedonal Anaesthesia (Über Hedonalnarkose). *Chirurgia*, 1913, xxxiv, 1.
By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Intravenous anaesthesia with hedonal, as proposed by Fedoroff, has been used in over 1,000 cases. Lastotschkin reports his 75 successful cases. In 70 cases, the veins were well defined; in 5, they were not. In 52 cases, the patients were absolutely quiet during narcosis; in the others, they moved slightly but not enough to disturb the operation. In 2 cases, narcosis was not complete; ether had to be given in one case, and a few drops of chloroform in the other. The cases were divided into three groups according to the amount of hedonal used: In 28 cases, 1,000 cc. or less was used; in 37 cases, 1,000-1,500 cc., and 10 cases, 1,500-1,800 cc. Vomiting occurred in only 4 cases. Twice there was bronchitis, 10 times pneumonia.

No deaths resulted from the anaesthesia, but 12 of the patients died from various causes and after varying periods of time. Three died immediately after the operation. The 75 cases are arranged by Lastotschkin in tabular form, giving details of the

course of the narcosis, and he is very favorably impressed from his experience. While the number of helpers required is at times inconvenient, this point should not be a decisive factor against the method. His conclusions are: Hedonal anaesthesia has the same advantages as the ordinary inhalation anaesthesia with ether or chloroform, but it also has some special points in its favor. It permits of accurate dosage, and avoids the possibility of sudden heart failure, because it contains the stimulating amido group. Moreover, there is a greater difference between the anaesthetic and toxic doses, but it should be used only when there are special indications for it. It is particularly valuable in peritonitis, septic processes, in long operations, and in heart affections.

SCHAAK.

Gadd, P.: Regional Anaesthesia in the Lower Jaw (Considérations sur l'anesthésie régionale dans la mâchoire inférieure). *Odontologie*, 1913, xlix, 447.
By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Often, as in ankylosis for example, it is impossible to use the method of producing anaesthesia of the mandibular nerve by injections from the mouth. For this reason Gadd experimented with injections from the outside. He inserts the needle in the midline between the crossing point of the arteria maxillaris and the lower jaw, i.e., the anterior border of the masseter and the submaxillary angle, and pushes it a little backwards, holding the head of the patient inclined to the other side, and keeping close to the bone. The distance from the mandibular foramen is 3 cm. At this point, and in the area surrounding it, 2 per cent novocaine solution is injected. For the treatment of the incisors, one more injection in the neighborhood of the mental foramen is necessary. Of 94 anaesthesias, 92 of which were for extractions, 89 were satisfactory.

SCHLESINGER.

SURGERY OF THE HEAD AND NECK

HEAD

Vuillet, H.: Syphilis of the Salivary Glands (Les syphilis des glandes salivaires). *Thèse de doct.*, Par., 1913.
By Journal de Chirurgie.

Vuillet says a syphiloma of the parotid gland can simulate a tumor and the diagnosis can be made only with the aid of the Wassermann or a microscopic examination. A serious and mutilating operation might be performed for such a tumor which would clear up rapidly under appropriate treatment. He reports a case of Letulles and one of Morestin's presented before the Société de Chirurgie last year, and makes an anatomical and clinical study of syphilis of the salivary glands.

The salivary glands are most often affected in individuals between 20 and 40 years of age, 12 cases under 24 years of age being reported in the statistics

of Gerber. The parotid gland is most often affected, being involved in 30 cases; the submaxillary in 7; the sublingual in 6; and the gland of Blandin-Nuhn in 1 case.

Vuillet points out that in hereditary syphilis there is engorgement of the parotids contemporaneous with chancre. In the secondary stage, there may be subacute parotitis, which may be accompanied by lesions in the submaxillary and sublingual and possible suppuration.

Tertiary syphilis may cause a chronic diffuse bilateral parotitis; a simultaneous involvement of the salivary and lachrymal, syndromes of Mikulicz or a syphiloma of the gland; this only we will consider.

The syphiloma appears from three to eleven years after the beginning of the disease, at first as a small intraglandular nodule which may become as large as an egg or an apple and may resemble a mixed

tumor. There is induration, no functional trouble, and generally no facial paralysis. It either heals spontaneously or suppurates, giving rise to a salivary fistula. Microscopically, there is a chronic luetic parotitis characterized by the formation of diffuse gummas combined with a specific interstitial insular parotitis. The prognosis is usually good. Mercury iodide or salvarsan almost always cures luetic infection of these glands and may even be used as a therapeutic test in diagnosing the condition when there is some question as to whether the inflammation is specific, tuberculous, actinomycotic or sporotrichitic.

F. M. CADENAT.

Murphy, J. B.: Bony Ankylosis of the Jaw, with Interposition of Flaps from Temporal Fascia.

Surg. Clin. J. B. Murphy, 1913, ii, No. 4.

By Surg., Gynec. & Obst.

The patient, aged 24, went to the hospital on account of limited motion in jaw. The condition dated back eighteen years, when he was kicked by a horse on left side of jaw, just posterior to the mental process. Sustained a compound fracture at this point. The wound suppurated and discharged pus for about two months, when a sequestrum or a tooth came out. The wound then healed. Immediately after accident patient also had a discharge from the right ear for some time. He never had any pain. Condition has not grown any worse in the past twelve years. Two upper teeth, right canine and bicuspid, were removed, and he ate only soft foods.

Ankyloses of the jaw may be divided into: 1. Intra-articular conditions; fibrous ankylosis; 2. bony ankylosis; 3. periarticular conditions; 4. muscular or cicatricial fixation. The man had a metastatic infection in the right mandibular articulation, and this extended into the ear. He had no extension of the infection throughout the entire length of the mandibular process, as in mouth infections or occasionally in typhoid infections, which may involve the whole jaw from the symphysis up into the mandibular articulation, so the head of the bone becomes necrotic and is expelled. In those cases the whole jaw can be taken out as a sequestrum. After the injury on the left side of his jaw he had an infection on the right side, extending from the mandibular articulation into the temporal bone, which produced the ankylosis.

These infections may be divided into three classes: 1. Those that pass through the internal ear and discharge behind the ear into the mastoid; 2. those that go through the posterior part of the petrous bone; 3. those that burrow forward and extend into the articulation. The other conditions that produce ankylosis are the infections that occur about the mouth, sloughing in typhoid and scarlet fever, noma, etc.

The articulation was exposed through a 2-inch incision, beginning a half inch in front of and on a line with the external meatus and extending up into the hair. The joint was represented by a mass of

fibrous tissue and an elevation which felt like the head of the mandible. There was no motion in the joint, and by taking the periosteum off the head, it was found there was bony ankylosis running clear forward across to the coronoid process. The demarcation between the mandible and zygoma was distinguishable. After freeing the ankylosis fairly well, it was divided with a straight, narrow chisel and the head of the mandible removed. This left a space of at least one-half inch. The real point of fixation was at the coronoid process, which was united to the under surface of the zygoma, so it held the latter firmly to the mandible. Next a flap of the aponeurosis and fat of the temporal fascia was raised, about two inches in diameter, base down, and dropped down under the zygoma and into the glenoid fossa, so it was interposed between the bones making up the joint, and preventing recurrence. The tip was fastened in with a few tacking sutures, and the skin closed with horsehair and dusted with subiodide of bismuth and sealed with collodion gauze. The jaw moved quite freely, but there was some fibrous fixation of the opposite side, to be overcome by stretching later.

The day after the operation the patient had free motion in the jaw. This increased rapidly. When the skin sutures were removed on the tenth day he was able to open his mouth one inch. A week later the fibrous fixation of the left joint was overcome by prying open the mouth under anæsthesia. The patient left the hospital on the twenty-second day. He could open his mouth an inch and a half. The result was ideal. There was no perceptible scar on the face, and no depression where the temporal flap had been deflected downward.

Haynes, I. S.: Cisterna-Sinus Drainage for Hydrocephalus. *Arch. Pediat.*, 1913, xxx, 670.

By Surg., Gynec. & Obst.

The report is given of a case of hydrocephalus treated successfully by draining through the cisterna magna according to methods previously designed by Haynes. The modified technique advised is as follows:

An incision was made one-fourth of an inch at the left of the midline from a point about three-fourths of an inch above the margin of the foramen magnum to the same distance above the inion, and the skin with the periosteum reflected to expose the occipital bone. A three-eighths of an inch button of bone was removed by a De Vibiss trephine midway between the margin of the foramen magnum and the inion and from this a gutter half an inch wide was cut away to the last point, exposing the dura over the cisterna magna, and, in the upper part of the area, the lateral (left) sinus.

A suture of vaseline-sterilized silk was passed through the dura and arachnoid so as to enclose a space about one-fourth of an inch square, within which space the short arm of the cannula was to be passed. An incision, 1 mm. in length, was then made into the lateral sinus. Blood flowed in a

steady, small stream, rising about an inch in height. Into the small opening the long arm of the cannula, which had been previously sterilized in vaseline, was inserted. The fit between the cannula and incision was so snug that no leakage of blood took place, but there was a flow of blood from the free end of the tube. An incision, a little less than one inch distant from that just made in the sinus, was then made through the dura and arachnoid into the cisterna magna, in the center of the area encircled by the silk suture. The cerebrospinal fluid spurted out at once to a higher level than the blood from the sinus. After a single quick sponging, the short arm of the cannula was inserted into the incision and the wound sponged. There was no leakage of either blood or fluid. The retention suture was then tied across the tube.

A few hours after the operation the temperature rose to 104°; then it dropped. Two months after the operation the child was in excellent condition.

Haynes suggests that in the future the skin incision, instead of being made in the median line, be a semilunar incision made at one side of the median line and with its concavity towards the middle.

Cubbins, W. R.: A Compilation of the Methods Used and the Results Obtained by Fellows of the Chicago Surgical Society in Brain Surgery. *Surg., Gynec. & Obst.*, 1913, xvii, 357.
By Surg., Gynec. & Obst.

The answers to the question as to which is the best method for hæmostasis indicated that the majority of the surgeons prefer a tourniquet but that others are just as strongly in favor of elastic artery forceps.

Most frequently the skull was opened with a trephine, followed with a De Vilbiss or wire saw. The results from the removal of tumors were very unsatisfactory. Only superficial cysts gave satisfactory clinical results.

Brain abscesses were located with a grooved director or a blunt trocar with multiple openings. In draining an abscess the consensus of opinion was that it is best to have a large opening and continue the drainage for a long time, using silkworm gut, silver or glass tubes. With the exception of those around the mastoid region, these abscesses recurred very often.

Decompression operations were recommended in cases of tuberculomata following basal skull fractures and benign but inaccessible tumors. It afforded relief also in the malignant cases.

Decompression and drainage in acute leptomeningitis was of no value the few times it was employed.

Jacksonian epilepsy, due to scar cyst and tumor was relieved only when operated upon before the condition had existed very long. Paresis of the opposite extremity was noted following these operations but it usually cleared up.

The operations for idiopathic epilepsy were uniformly unfavorable.

Bárány, R.: Clinical Development of My Symptom-Complex (Die klinische Entwicklung meines Symptomenkomplexes). *Wien. med. Wchnschr.*, 1913, lxiii, 2085.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Inflammatory adhesions can so close up the cisterna pontis at the cerebello-pontine angle that a serious cystic meningitis occurs. The neighboring nerve trunks are injured by pressure from this, particularly the auditory, and perhaps also the nerve-endings of the auditory, which are found in the labyrinth communicating with the cisterna, as well as the neighboring parts of the cerebral cortex. The clinical picture generally begins suddenly with buzzing in the ears, dizziness, disturbance of balance, and vomiting. Difficulty in hearing and headache in the occipital region of the affected side follow. There are two peculiar characteristics: When an attempt is made to touch an object with the hand of the affected side it passes by on the outer side of it, and when nystagmus is elicited toward the diseased side there is no movement of the eye inward. A series of clinical observations shows how Bárány gradually came to display this symptom-complex, found its cause, and how he localized the centers for the arm movements in the cortex of the cerebellum. Sometimes spontaneous rupture of the cyst brings about a cure; otherwise lumbar puncture must be done or the cyst opened surgically.

PAETZOLD.

Marx, H.: Surgery of Tumors of the Cerebello-Pontine Angle (Zur Chirurgie der Kleinhirnbrückenwinkeltumoren). *Mitt. a. d. Grenzgeb. d. Med. u. Chir.*, 1913, xxvi, 117.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Marx describes in detail a case of tumor of the cerebello-pontine angle that had been developing for fifteen months in a 48-year-old man. Symptoms: unsteadiness of gait, decrease in visual and auditory acuity, nystagmus, a tendency to fall toward the left, bilateral choked disc, slight paresis of the right abducens. Kümmell operated through the labyrinth by Pause's method, but on account of the length of the operation and the severe hæmorrhage he could only curette out some small fragments of the tumor. For a while the patient improved markedly, but after five months a cyst appeared at the site of operation, and was punctured. After thirteen months he grew very much worse, presenting optic nerve atrophy, lack of right corneal reflex, paralysis of the facial on the right side, deafness, and ataxia of the right arm. A second operation was performed by Borchardt's method and the tumor, which was the size of a small apple, was removed in four pieces. He seemed to be getting along well, but died suddenly on the eighth day from paralysis of respiration. The autopsy showed that the tumor was a fibrosarcoma, that it was smooth and had been removed in its entirety, and that the right half of the cerebellum was compressed and partially destroyed.

HENSCHEN.

Fühner, H: *Pharmacological Investigations in Regard to the Active Constituents of the Hypophysis* (Pharmakologische Untersuchungen über die wirksamen Bestandteile der Hypophyse.) *Ztschr. f. d. ges. exp. Med.*, 1913, i, 397.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Hypophysin represents the collective influence of the hypophysis upon the blood pressure, the respiration, and the uterus. Hypophysin acts differently upon the respiration and blood pressure of rabbits and cats. Tests made upon the isolated wombs of several animals as well as experiments on the uterus *in situ* according to a new method advised by the author, always gave the same results.

Hypophysin is composed of four different substances which may be obtained in a crystalline state. Clinically the first active principle obtained is not very active on the respiration and uterus but it influence on the blood pressure is typical. The second constituent has a marked action on blood pressure, the respiration and the uterus. The third is qualitatively and quantitatively much more active than the second. The fourth substance has the same marked action on the uterus as the third, but influences the respiration and blood pressure only slightly. The constituent of the hypophysis that acts upon the uterus, therefore, is not localized in any one part of the gland. Besides the four products from which hypophysin is formed, four other substances have been isolated from dealbuminized extract of the hypophysis. One of these is an acid. These substances, however, do not possess any action worth mentioning.

BENTEN.

Luger, A.: *Some Features of Röntgenographic Changes in Pituitary Diseases.* *J. Am. M. Ass.*, 1913, lxi, 752.

By Surg., Gynec. & Obst.

The author confines himself to only two aspects of the röntgenographic studies of pituitary disease. First, the general change in skeletal development, and, secondly, the changes in the skull and in the sella turcica which he considers of great importance in relation to the differential diagnosis. In addition to the known changes in the skeletal configuration such as mandibular prognathism, enlargement of extremities, and increase in size of sinuses of the skull, he mentions the changes in the cervico-dorsal spine which have been described by French authors.

There are normal variations in the size and shape of the sella. He considers a measurement of 15 mm. antero-posterior and 10 mm. vertical diameter the normal limit. In brachycephalic persons, the sella is short and rather deep, while in the bradycephalic, the sella is long and flat.

It has also been noted that the size of the sella corresponds to the length of the posterior portion of the base of the skull and is in indirect proportion to the distance from its anterior wall to the ethmoidal spine. Again, there is apparently a relation between the size of the sella and the sphenoidal cells, for a small sella is frequently found in association with a massive sphenoidal bone.

Changes in other of the ductless glands cause at times an enlargement of the sella. This has been noted when the sexual glands have been removed or their functions disturbed, and in certain cases of thyroid disease.

As the gland itself is rarely seen, and this only when calcification has taken place, conclusions are drawn only from the change in the bony parts. These changes consist of an enlargement of the sella, of a thinning of the floor, and a thinning and absorption of the dorsum and of the posterior clinoid processes.

The order of appearance of these changes depends on whether the pituitary gland itself is involved—the so-called intrasellar tumor—or whether there is some pathologic condition in the immediate neighborhood of the gland. In intrasellar tumor, there is first an enlargement in the site of the sella, with increasing thinning of its floor and of the dorsum sella, followed later by absorption of the posterior clinoid processes and dorsum sellæ.

In the other types of tumor, the first change noticed is the absorption of the clinoid processes and of the dorsum sellæ. The sella may be enlarged later but it will not be deepened and rounded as in the case of intrasellar tumors. In late cases the findings would be the same.

In cases of brain tumors having no topographic relation to the pituitary gland and in cases of hydrocephalus, changes are found in the sella similar to those caused by extra-sellar tumors. The differential diagnosis in these cases can be made only from the clinical symptoms and other röntgen ray findings in the skull.

Attention is called to the enlargement of the sphenoparietal sinus due to pressure from the growth on the sinus cavernosus, as described by Schüller.

Finally, tumors of the acoustic nerve cause a characteristic change in the dorsum sellæ, there being a tendency in these cases for the dorsum sellæ to incline forward.

WM. A. EVANS.

Peritz, G.: *Diseases of the Hypophysis* (Hypophysenerkrankungen). *Monatschr. f. Psychiat. u. Neurol.*, 1913, xxxiii, 404.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

On the bases of our present knowledge of the functions of the two lobes of the hypophysis, Peritz gives the following scheme of classification for diseases of the hypophysis: 1. Diseases of the anterior lobe: (a) hypofunction, dwarfism; (b) hyperfunction, acromegaly, gigantism. 2. Diseases of the posterior lobe: (a) decreased function, hypophysial adiposity; (b) hyperfunction, diabetes incipidus. 3. Mixed forms (acromegaly and adiposity, dwarfism and adiposity). 4. Diseases of the hypophysis in combination with disease of the other glands: (a) genital glands and hypophysis, eunuchoidism; (b) all glands, Claude and Gougerot's pluriglandular disease and Falta's multiple sclerosis. These different clinical pictures are discussed in connec-

tion with some interesting case histories which particularly illustrate the frequent difficulties of diagnosis. Particularly noteworthy is a very remarkable case of obesity extending only from the hips downward, in two sisters of whom only one showed cerebral symptoms, ocular disturbances and positive röntgen findings. Contrary to Fischer's opinion, it may be a long time in acromegaly as well as in adiposity (5 years in one case) before injury to the genital gland appears. To explain the peculiarities of the interaction between the function of the hypophysis and the sexual glands, he offers the following hypothesis: There is a chemical antagonism between the anterior and posterior lobes (gas metabolism, sugar); posterior lobe and sexual glands contain a secretion which is mutually stimulating. By atrophy of either one the other is injured, so that a lack of balance arises between the two parts of the hypophysis. Cushing's theory that hypophyseal obesity is the result of deficient oxidation of sugar is very attractive. Its hypophyseal origin cannot be determined from the localization of the fat. Diagnosis would perhaps be possible by means of investigation of metabolism (respiratory quotient, sugar in the blood). More attention should be paid to lymphocytosis. Most important at present is the demonstration of swelling of the hypophysis through affection of the optic nerve, widening of the sella turcica, etc. But tumor is not always the cause of disease of the hypophysis, as is shown by the changes in the hypophysis in pregnancy as well as the post-mortem findings in pluriglandular diseases. For this very reason other diagnostic methods must be devised. He thinks operation is indicated only when there are severe cerebral symptoms.

TÖLKEN.

Schüller, A.: Dystrophia Adiposo-genitalis (Dystrophia adiposo-genitalis). *Handb. d. Neurol.*, 1913, iv, Spez. Neurol., 241.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

This work is a section of the new handbook of neurology and sets forth the present views in regard to that disease, which is characterized by a combination of local cerebral symptoms with obesity and atrophy of the genitalia. It is generally considered to be due to decreased functional activity of the hypophysis. The chief therapeutic indication which interests the surgeon is the removal of the cause, generally a tumor of the hypophysis. Schüller believes that Hirsch's endonasal operation is not only the simplest but offers the best prognosis. The results of the operation are satisfactory. Though in most cases the removal of the tumor was by no means complete, improvement was shown. JUNG.

Goldzieher, M.: A Tumor of the Pineal Gland (Über eine Zirbeldrüseneschwulst). *Virchow's Arch. f. path. Anat., etc.*, 1913, ccxlii, 353.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Goldzieher describes a case of tumor of the pineal gland which he examined post-mortem. It was in

a 16-year-old boy, and there were metastases in the lungs, liver, and peribronchial lymph nodes. The microscopic picture of the tumor and the metastases was very similar to that of the chorio-epithelioma, described by Askanazy. In reality it was an angio-plastic sarcoma as described by Malassez and Monod. Of the 33 tumors of the pineal gland thus far collected by Pappenheimer, the majority were sarcomata, with teratoma or glioma second. In Goldzieher's case there was abnormal sexual precocity, hyperplasia of the interstitial cells of the testicle, excessive spermatogenesis, and unusual development of secondary sexual characteristics, as hypertrichosis. This fact, in connection with the early physiological atrophy of the pineal gland, suggests the theory propounded by Biedl and Munzer that the internal secretion of the pineal gland is antagonistic to that of the sexual glands, so that the latter can only attain full activity when the former has undergone involution. The function of the pineal gland would in that case be antagonistic to that of the hypophysis, which favors the development of the sexual glands. Goldzieher thinks that the defect in the function of the pineal gland acts directly, as well as indirectly, through the hypophysis.

GEBELE.

NECK

Blum, F., and Grützner, R.: Studies on the Physiology of the Thyroid Gland; Methods of Iodine Determination in Organic Substances (Studien zur Physiologie der Schilddrüse; Methoden der Jodbestimmungen in organischen Substanzen). *Ztschr. f. physiol. Chem.*, 1913, lxxxv, 429.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The authors are attempting to revise the chemistry of iodine metabolism of the thyroid gland by new methods of investigation. The methods in use at present for iodine determination in organic substances are discussed. The authors consider it inaccurate to reduce the substances to an ash after mixing them with sodium nitrate, especially if large quantities are dealt with, on account of the large number of other salts contained in the mixture. The superoxide of barium is recommended as the baryte is subsequently easily removed. Then follows a criticism of the colorimetric and titrimetric determinations of iodine, and a number of well-known but unessential errors are pointed out. After reduction to an ash, the authors advise complete oxidation with potassium permanganate in acid solution, a complete removal of the permanganate with alcohol, removal of the alcohol, acidulating with phosphoric acid, titration with thiosulphate 1-100. The authors also describe a method for quantitative determination of organic and inorganic iodine in blood and organs, which depends upon the complete precipitation of the albuminous substances by means of acetone. The value of the method is illustrated by citing a few examples which clearly demonstrate its efficiency and indicate the errors to be avoided. KOCHER.

SURGERY OF THE CHEST

CHEST WALL AND BREAST

Murphy, J. B.: Cylindric-Cell Carcinoma of the Breast. *Surg. Clin. J. B. Murphy*, 1913, ii, No. 4.
By Surg., Gynec. & Obst.

The patient under consideration, aged 53 years, sought advice on account of a hard mass in left breast, an inch above and to outside of nipple, and about the size of a pigeon's egg. She first noticed the mass in February, 1913. It was then hard and of the same size as it is now. She thinks she had a small mass the size of a pea in the breast three years ago, but is not positive. She remembers injuring the breast quite severely two years ago. In December, 1912, her heart and lungs were examined thoroughly, and no mass was found at that time. The mass is not adherent to the chest wall, and the skin over the mass is movable. There is no ulceration present, no retraction of the nipple, no axillary lymph-node enlargement.

At operation, April 29, a frozen section showed it to be a cylindric-cell carcinoma, and a radical operation was therefore done. The usual Halsted incision was made, extending out on the shoulder, and the axilla was cleaned out before removing the breast, the anterior aponeurosis of pectorals and all fatty tissue being removed first. Then the p. major was freed from its costal attachment and reflected out onto the arm, splitting it well up to the clavicle. The fascia and fat between the pectorales were then removed, as a lymph node is commonly found here. The p. minor was then detached from its costal attachment and deflected out or removed entirely. All the aponeuroses of both these muscles were removed; the edge of each muscle dissected free, two fingers passed under muscles, which were divided close to the ribs so as to leave muscle enough distally to fill in axilla, i.e., make an axillary muscle pad. The chest portion of muscles was elevated entirely so as to expose fascial covering of ribs. All lymph nodes and lymph-carrying structures were taken out before manipulating breast at all. Thus, by going down, the chances of metastases from the breast getting into the general lymph circulation are lessened. The axillary vessels were freed very carefully of fat, care being taken not to wound the subscapular nerves. The breast itself was then removed, taking care to undermine the skin edges as far as possible, a very important point.

There is danger that the subsequent contraction of a scar might compress the axillary vein and cause edema, but this is prevented by leaving in the pectoral muscle stumps to act as a protecting pad for the axillary vessels and nerves. The next step was to place the pectoral muscle stumps into the axilla. By a few catgut sutures they were swung in, down, and back into the axilla, and fastened to the edge of latissimus dorsi and chest wall. Now all the axillary vessels and nerves were fully protect-

ed. She could swing her arm in any position without interfering with the circulation. The wound was closed by putting in a considerable number of silkworm-gut tension sutures and horsehair for the incision taking care that there was no tension on these flaps. A small rubber drainage-tube was put in, extending high up into the axillary space, and fixed to skin with a silkworm-gut suture. The drainage-tube was taken out at the end of 72 hours and the arm dressed by the side, hand resting on the chest. The iodine is first removed with alcohol, and then the bismuth subiodide dusting powder is applied.

The drain was removed on the fourth day, there having been little drainage. Stitches removed on the fifteenth day. Primary healing. The convalescence uneventful. Patient left five weeks after operation.

Kron, N. M.: Local Anæsthesia in Breast Amputation (Lokalanästhesie bei mamma-amputation wegen Carcinom). *Chirurgia*, 1913, xxxiv, 54.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Local anæsthesia in amputation of the breast was first used in Russia by Hirschel. Kron's report of the case shows that the patient was a 70-year-old woman with myocarditis, dilatation of the aorta, and emphysema. Therefore local anæsthesia was selected. The anæsthesia began with injection in the region of the brachial plexus, then in the region of the intercostal nerves. All together 65 ccm. of a 0.5 per cent solution of novocaine and 50 ccm. of a 0.25 per cent solution with the addition of 8 or 9 drops of adrenaline was used. The amputation of the breast and cleaning out of the axilla proceeded smoothly and without pain. The patient recovered and was discharged at the end of ten days. SCHAAK.

King, H. M., and Mills, C. W.: Therapeutic Artificial Pneumothorax. *Am. J. M. Sc.*, 1913, cxlvi, 330.

By Surg., Gynec. & Obst.

These authors have confined the use of artificial pneumothorax to cases which have failed to improve under the usual and more conservative measures.

Some advocates of the method employ it in so-called early and favorable cases, but as most of these cases improve under the usual treatment it is difficult to say just how much of the improvement is due to this particular procedure, consequently the method employed in the cases here reported is one of last resort.

After discussing the various indications for the treatment and conclusions reached by various authors, the technique is described and the histories and skiagraphs of 16 cases are given. Two of the cases have shown marked and seemingly permanent improvement; six, temporary or slight improvement; and in one case, hæmorrhages have apparently been controlled. In one case of lung abscess no

improvement followed the treatment, and in six, on account of pleural adhesions, either no gas could be injected or not enough to produce sufficient collapse.

H. A. PORTS.

Thomas, G. F.: *The Röntgen Diagnosis of Lesions in the Region of the Mediastinum.* *Tr. Am. Röntg. Ray Soc., Boston, Oct., 1913.*

By Surg., Gynec. & Obst.

The X-ray, either radiographically or fluoroscopically, offers a means for the early diagnosis of lesions in the region of the mediastinum when pressure symptoms are the patient's only complaint and physical examination is negative owing to the inaccessibility of the mediastinum.

A normal position of the mediastinum and its contents depends upon a normal tension in both sides of the thorax and a normal equilibrium between the intrathoracic tension and the intra-abdominal pressure. For this reason plural adhesions or effusions, pneumothorax, tumors, superfluous fat within the abdominal cavity, and visceroptosis all cause distortions of the shadow.

A broad and mottled mediastinal shadow is indicative of tuberculous mediastinitis; large, discrete shadows, of Hodgkin's disease; a transverse position of the heart resulting from lengthening of the aorta (without dilatation), of specific aortitis; a pulsating tumor, of aneurysm; and a tumor rising with deglutition, a substernal thyroid as opposed to aneurysm. The bismuth visualized cesophagus shows numerous variations from normal which are due either to lesions of its wall or pressure from without.

The semilateral projection is of distinct value for the study of the anterior and posterior mediastinal contents, the bodies of the dorsal vertebra, and the enlarged thymus.

In most cases the outline of the aorta should show distinctly enough through a superimposed shadow to make it possible to differentiate between an aneurysm and a mediastinal tumor.

Emphasis was given to the dictum that the method of procedure should be a correlation of the anamnesis and the physical and laboratory findings, together with an X-ray examination.

FRANCES C. TURLEY.

HEART AND VASCULAR SYSTEM

Scholz, B.: *The Clinical Picture of Traumatic Rupture of the Heart Valves* (Das klinische Bild der traumatischen Herzklappenzerreissung). *Ztschr. f. Versicherungsmed., Leipz., 1913, vi, 33.*

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Scholz describes the picture of true rupture of the heart valves after exclusion of the symptoms due to hæmorrhage into the endocardium, myocardium, or pericardium, and gives a typical case. As has been proved experimentally, hypertension in the aorta plays an important part in rupture of the heart valves caused by trauma of the thorax.

Valve injuries are by far more frequent in the left heart. Spontaneous ruptures from excessive high arterial pressure always affect the left heart. In injuries to the pulmonary and aortic valves there is either a perforation of the valve or it is torn off at its attachment. In the auriculo-ventricular valves there is hardly ever a complete separation, but individual chordæ tendineæ, or the bundles of papillary muscles, are torn. The clinical picture of these two forms of injury is the same. In perforation there is simply insufficiency; where the valve is completely or partially torn off there is insufficiency and stenosis, the double murmur being caused by the fluttering of the torn flaps. A pure stenosis is not observed in rupture. It can come only from traumatic endocarditis. The first objective signs of ruptured heart valve are tachycardia, arrhythmia, and a fall in blood pressure. After from a few hours to a few days a pathognomonic sign of rupture appears: a very loud, grating, double murmur, at first without enlargement of the heart, since the healthy muscle maintains compensation. Gradually the picture becomes more like that of heart failure from endocarditis. The subjective symptoms generally appear after a few days and consist of marked dyspnoea and painful sensations in the region of the heart.

Wrede, L.: *Direct Massage of the Heart* (Über direkte Herzmassage). *Arch. f. klin. Chir., 1913, ci, 833.* By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author attempted to answer the question as to whether it is possible to bring about artificial circulation by means of direct massage of the heart. He injected a solution of carminum coeruleum into the left external jugular vein of dogs that he had killed and then induced artificial respiration and applied direct massage to the heart. After a time he succeeded in finding the dye in the blood of the veins as well as in that of the arteries. From this fact he concluded that the dye must have passed through the capillary system. The dye was found also in the portal blood. Whether the passage through the capillaries occurred in the direction of the normal circulation or in the opposite direction could not be proven absolutely. However, as during the massage the blood pressure was considerably higher in the arteries than in the veins, it seems at least very probable that the circulation of the blood was in the normal direction.

Adrenal preparations were found to increase the effect of the direct massage of the heart considerably. Often in the experiments with animals massage of the heart and artificial respiration failed and the heart-beat did not begin until after paranephren had been injected into the blood channel. The effect of the paranephren, however, disappeared quickly. To obtain more lasting results, according to Kretschmer, a solution of adrenal preparation must be allowed to flow in continuously. The author did not succeed in obtaining a continued increase in blood pressure by this method. He believes, how-

ever, that the preparation should be injected repeatedly in order to obtain at least a repeated increase in the blood pressure.

Of great importance for the results of direct massage of the heart is good artificial respiration. Even after the beginning of spontaneous breathing it must not be interrupted too soon. In his experiments with animals, the author noted on the reawakening of the respiration centers that, in spite of continued artificial breathing and independent of it, there was first a period of dyspnoeic breathing. This he believes was to rid the respiration centers of the excess of abnormal metabolism products, for only when that had been accomplished did the reaction to the respiration stimulus become normal. In the case of man, the author believes it is very important that the artificial respiration should not be interrupted until the respiration centers have become completely quieted.

Numerous failures of direct massage of the heart Wrede attributes to faulty artificial respiration. The result of massage of the heart is dependent, not upon the vitality of the heart, which is great, but upon the vitality of the cerebrum which expires within ten to fifteen minutes after the circulation has been interrupted. The heart muscle itself may be severely injured by the massage, but Wrede believes that such injuries can be avoided and recommends the method for suitable cases.

M. VON BRUNN.

PHARYNX AND ŒSOPHAGUS

Millsbaugh, W. P.: Some Interesting Œsophageal Cases. *Laryngoscope*, 1913, xxiii, 938.

By Surg., Gynec. & Obst.

Millspaugh gives an interesting list of foreign bodies which have been removed from the œsophagus under his supervision. The first instance is that of an insane woman swallowing a nine-inch knife which was finally removed by gastrostomy. In his second case, while no foreign body was found in the œsophagus, the experience shows the danger of using too much cocaine in the performance of passing the tube. Tooth-plates and parts of tooth-plates are among the foreign bodies most frequently swallowed, while coins are common articles which children are prone to use for obstructing the œsophagus. One patient imagined that her tooth-plate, which she swallowed seven years before, was still in the throat. An X-ray cleared the diagnosis, but the woman still believed her teeth were in her œsophagus.

Fragments of bone, caught in the œsophagus, are a frequent cause of worry and trouble. Millspaugh relates a very interesting case of a girl about 23 years old, who had produced a long stricture in her œsophagus by swallowing pure nitric acid. After many attempts at dilating, etc., in company with two other surgeons, he endeavored to introduce the bronchoscope, which resulted in tearing an opening through the pericardium, through which the three surgeons saw the pulsating heart. H. B. BROWN.

Meyer, W.: Œsophagoplasty. *Ann. Surg.*, Phila., 1913, lviii, 289.

By Surg., Gynec. & Obst.

From the experience of three cases of œsophageal stricture in which plastic operations have been done, the author discusses the technique and possibilities of œsophagoplasty by the Jianu-Roepeck method, in which the lower end of an extrathoracic œsophagus is constructed from the partially excised greater curvature of the stomach. In no case was the plastic tube long enough to connect with an oral stump, but the author believes the gap can be successfully bridged by a plastic operation on the skin, or by the use of a tube. From experiments on animals, he suggests the possibility, in some cases, of using the Jianu tube intrathoracically, anastomosing it directly to the œsophageal stump proximal to the stricture. In the use of the Jianu tube extrathoracically, it is perhaps better to transplant the tube subcutaneously than subpectorally.

The author believes that the reconstruction of an œsophagus is to be thought of, not only in cases of benign stricture and operable malignant tumors, but in the inoperable malignant strictures as well, for in such cases the restoration of the power of swallowing would remove the patient's greatest hardship.

BARNEY BROOKS.

Denk, W.: The Radical Operation for Carcinoma of the Œsophagus (Zur Radikaloperation des Œsophaguscarcinoms). *Zentralbl. f. Chir.*, 1913, xl, 1065.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

In experiments with cadavers and animals, Denk has marked out a method of radical operation for œsophageal carcinoma by which the thorax is not opened. With moderate differential pressure or Auer-Meltzer insufflation, a 20 ccm. incision is made parallel to the left costal arch. The peritoneum over the cardia is freed bluntly, the vagus branches being avoided, and the œsophagus is mobilized in the hiatus and mediastinum up to the bifurcation, a special instrument being used. If the carcinoma cannot be freed, gastrostomy is performed. After the lower œsophageal segment is freed, the neck is opened, followed by mobilization. With bimanual preparation the fingers reach several centimeters from the abdomen and neck toward the opposite covering. If the carcinoma lies above the bifurcation the operation is begun at the neck. After mobilizing the œsophagus, it is severed close to the cardia, after crushing and applying metal clamps, one clamp cardially. The œsophagus, with the carcinoma, is pulled through the neck wound and divided above the carcinoma. The stump is placed subcutaneously, antethoracically, the cut surface of the œsophagus being sewed into the skin. The cardia is closed, the opening in the diaphragm sutured, and gastrostomy performed. The latter might be done two or three weeks earlier, through the right rectus muscle. After healing, an œsophagus fistula is connected with gastrostomy tube. Later antethoracoplasty is performed. The advantages of this method are: avoidance of the

pleural route, avoidance of injury to the pleura, and impossibility of the occurrence of mediastinal infection by oesophageal contents. If the carcinoma tears, the mediastinum can be drained through the laparotomy or cervical wound, and the pleura through a rib resection.

Borr.

Teske: Statics and Mechanics of the Thoracic Viscera (Über Statik und Mechanik der Brusteingeweide). *Zentralbl. f. Chir.*, 1913, xl, 1368.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

From several years of study and experimenting on animals, Teske believes that the commonly taught theory of the passive expansion of the lungs by the thoracic wall is right. When respiration takes place in a bilateral pneumothorax it is not active but is caused by the lungs filling up the pleural sinus and coming in contact with the thoracic wall and diaphragm. The fact that animal experiments have shown that the upper and middle lobes may be collapsed while the lower lobe is air-containing, argues against the capacity of the lungs for active contraction. The practical point to be gained from this is, that in applying pneumothorax the air should only be allowed to penetrate slowly, so that the lung may be slowly pressed downward into the pleural sinus. Brauer's theory of the pendulum movement of the air in the pneumothorax lung is refuted by the author's method of artificial hydrothorax to keep the respirations quiet in operations on the thorax. If narcosis is deep, fluttering of the mediastinum need not be greatly feared. To avoid it, however, Müller-Murphy's method of fixation of the mediastinum may be used or Krause's tampon or Teske's method of artificial hydrothorax and strong traction on the sternum. Rhythmic compression may be used to guard against dilatation of the heart and insufficiency of the auriculo-ventricular valves. In an active lung it is impossible to keep either half of the diaphragm stationary by cutting the phrenic nerve. The lungs are not only respiratory organs but are supports in the architecture of the body. We can only examine the statics and mechanics of the thoracic viscera by taking into consideration their relations to the abdominal cavity.

BODE.

Henschen, K.: Fascia Transplantation to Cover Defects in the Diaphragm, Chest Wall and Pericardium (Transplantative Deckung grosser Defekte des Zwerchfells, der Brustwand und des Herzbeutels mit Fascienlappen). *Zentralbl. f. Chir.*, 1913, xl, 1249. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Animal experiments conducted by Henschen showed transplanted fascia after three and one-half and seven weeks free from necrosis, somewhat swollen, but still capable of staining and partially vascularized. Therefore, the following technique was recommended for operations on man: Defect on the thoracic wall to be closed by an intrapleural flap of fascia, the two edges to be applied smoothly to the surface of the costal pleura. Before cutting the sutures, pressure to be raised so that the lungs come in contact with the thoracic wall. On top of this a second flap of fascia of the same size, or only broad bands of fascia or periosteum, to be fastened to the outer edges of the defect and to the inner flap with button sutures of fine silk; this membrane to be covered with skin or soft tissue. This procedure is also adapted to covering the defect in congenital, traumatic, or spontaneous hernias of the lung.

Henschen also tried the transpleural repair of defects in the muscular and tendinous diaphragm on dogs. Fascia flaps were applied to the defect from the abdominal side, as above described. There were always adhesions between the lung and the fascia, but never adhesions of the abdominal surface with the abdominal organs. The histological picture was as described above. The fascia was transformed into firm, tense connective tissue.

In operations of this nature on human subjects a peritoneal and a pleural layer are recommended. Each half of the diaphragm can be laid bare by a long intercostal thoracotomy incision in the seventh, eighth, or ninth intercostal spaces. In chronic hernia or larger eventration through the diaphragm, radical operation is indicated. Good view of the field to be obtained only through the thorax. If necessary, thoracotomy is combined with a laparotomy incision. In the same way defects in the pericardium may be replaced by fascia.

HOFFMANN.

SURGERY OF THE ABDOMEN

ABDOMINAL WALL AND PERITONEUM

Verhoogen, J.: The Transverse Incision in Abdominal Surgery (Des incisions transversales dans la chirurgie abdominale). *J. méd. de Brux.*, 1913, xviii, 125. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author gives a short history of oblique and transverse incisions. These methods have been known for some time but not extensively adopted.

According to anatomical principles the longitudinal incision is to be preferred, as it does not cause so

much damage to the nerves that govern the rectus muscles or to the tissues generally. A detailed exposition is given of the expediency of the transverse incision in special abdominal regions and the consequent greater accessibility of the viscera. In general the cicatrices are resistant and not very noticeable if the healing process goes on without any reaction; otherwise, especially after transverse division of the rectus muscles, there may be very disagreeable eventrations. Untoward results are naturally more pronounced in the larger incisions.

To sum up the advantages of the oblique and transverse incisions more accurately, it will be necessary to await the results of a greater number of cases.

FIEBER.

Weishaupt, E.: A Case of Extraperitoneal Adenoma and Two Cases of Intraperitoneal Myoma of the Round Ligament, with Remarks in Regard to the Origin of Inclusions of the Epithelium (Ein Fall von extraperitonealem Adenomyom und zwei Fälle von intraperitonealen Myomen des Ligamentum rotundum mit Anmerkungen über die Herkunft der epithelialen Einschlüsse). *Arch. f. Gynäk.*, 1913, xcix, 491.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Cases are described with details of the histological findings. Tumors of this kind originate from the epithelium of the peritoneum and the processus vaginalis peritonei. A foetal origin is to be thought of only in a very few cases where there is a morphological conformity with renal glomeruli. Inflammation must be considered the disposing factor in all cases.

KÖHLER.

Götjes, H.: Surgical Treatment of Ascites (Zur chirurgischen Behandlung des Ascites). *Verhandl. d. Gesellsch. deutsche Naturforsch. u. Ärzte*, 1913, ii, part 2, 152. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Götjes determined by animal experimentation that stasis in the region of the collateral branches of the portal vein is easily compensated, while stasis in the region of the superior mesenteric vein, the chief source of supply for the portal vein, is irreparable and can only be borne when an artificial way is provided for collateral circulation in this region. Therefore, he proposes, as a modification of Talma's operation, to split the left fold of the mesentery and dissect it back for about a hand-breadth, to make a peritoneal wound of about the same extent over the seat of the left kidney, and to fasten the edges of these peritoneal wounds together throughout their entire extent, thus creating the possibility of a collateral circulation between the superior mesenteric and left renal veins.

BLEZINGER.

Sick, C., and Fraenkel, E.: The So-called Biliary Peritonitis (Ein Beitrag zur sog. galligen Peritonitis). *Beitr. z. klin. Chir.*, 1913, lxxxv, 687.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The authors report a case of so-called biliary peritonitis. At operation a minute traumatic perforation of a healthy gall-bladder was found. Serial sections were made and are reported on in the original article. On the basis of this and the Nauwerk-Lübke case, the authors conclude that a similar condition must have existed in most of the cases reported up to the present time as biliary peritonitis without perforation of the gall-bladder. The perforations in these cases must have been so small as to escape notice. Serial sections are really necessary to decide whether the gall-bladder wall has been completely or partially punctured. Even

careful macroscopic examinations of a suspected area are not sufficient to decide whether actual perforation has occurred. Peritonitis certainly did not arise from contact with sterile bile. Cholecystectomy is recommended as the best treatment of the conditions.

BLEZINGER.

Weber, F.: Injury with a Pointed Instrument; with Comments on Prophylaxis and Treatment of Peritonitis (Ein Fall von Pfählungsverletzung. Im Anschluss daran einiges über Prophylaxe und Therapie der Peritonitis). *München. med. Wchnschr.*, 1913, lx, 1772.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

A 21-year-old girl fell in the hay-field on the prong of a rake which she said penetrated 30-40 cm. into the vagina. In the left vaginal vault a jagged tear into the parametrium admitted two fingers. An iodoform gauze strip was placed in the wound and the vagina loosely tamponed. After twelve hours, marked symptoms of peritonitis developed and laparotomy was performed. In the abdominal cavity a large quantity of fluid and coagulated blood was found. Below the left ovary a tear in the peritoneum 5 cm. long passed through the parametrium into the vagina, no other injury being noted. The patient was placed in an extreme Trendelenburg position and the abdominal cavity washed out with 25 liters of salt solution; the peritoneal tear sewed up; the parametrium left open toward the vagina; 30 ccm. of 10 per cent camphorated oil placed in the abdominal cavity and the abdomen closed. Recovery was uneventful.

The author cites 200 cases where excellent results were obtained by abundant irrigation with salt solution when the peritoneum had been soiled by ruptured pyosalpinx or ovarian tumors or tubal abortions, the treatment being much less severe than dry sponging. The application of sterile camphorated oil increases the favorable effect. Even when peritonitis has already developed, irrigation with salt solution and application of camphorated oil give excellent results.

HERZOG.

Despard, D. L.: Subdiaphragmatic Abscess. *Ann. Surg.*, Phila., 1913, lviii, 334.

By Surg., Gynec. & Obst.

Despard reviews the anatomical relations of the viscera in the subdiaphragm and points out the boundaries and localities in which pus may accumulate and form subdiaphragmatic abscesses.

These abscesses are usually secondary to some lesion causing direct contamination of this area, as a perforating gastric or duodenal ulcer, or next in order of frequency, by infections spreading, by continuity or contiguity, from the appendix, gall-bladder, liver, pelvic organs, thorax or spleen.

He reports four cases and suggests a method, making use of an extra- and an intraperitoneal incision, by which many of these abscesses may be opened and drained without draining through either the pleural or the peritoneal cavities.

Davies, T. F.: A Method of Operating for Radical Cure of Inguinal Hernia. *Brit. M. J.*, 1913, ii, 727.
By Surg., Gynec. & Obst.

The author makes his skin incision just internal to and above the spine of the pubis, and runs it upwards parallel to the fibers of the aponeurosis of the external oblique from which the skin and subcutaneous tissue is raised. The pillars of the ring having been clearly defined, the external oblique is split up far enough to give sufficient room. The cord and structures covering the sac are seen lying in their places and must not be touched. The lower margin of the internal oblique is retracted upwards. The peritoneum (not the sac) is then opened from the internal ring upwards. In almost all of the cases operated upon, the internal ring is very much approximated to the external by the dragging of the herniated gut, so that there is plenty of room above it. If there is not enough room, however, the incision of the peritoneum may be carried down on the outer side of the ring. When the abdominal cavity is opened, the neck of the sac can be seen from the inside. If omentum or other structures are adherent they may easily be separated or drawn out of the sac. The lower end of the incision through the peritoneum is then carried down to the neck of the sac and around it, so that the abdominal peritoneum is entirely separated from the sac, just as the hand of a glove would be separated from a finger if the latter were cut off at its junction with the palm. The abdominal peritoneum is next closed with a continuous suture as in any other abdominal operation. The sac is dissected out. Evidently the cord is not transplanted. The internal oblique is drawn down to the shelving edge of Poupart's ligament and the external oblique usually overlapped. The operation is particularly applicable where there is the hardened fibrous ring at the opening in the sac.

M. S. HENDERSON.

Dreesman, H.: The Radical Operation for Inguinal Hernia (Die Radikaloperation der Inguinalhernie). *Verhandl. d. Gesellsch. deutscher Naturf. u. Ärzte.*, 1913, ii, 150.
By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Although the difference between the percentage of recurrences of inguinal hernia after the Bassini method, (i. e., 2.48 per cent in 403 cases), and the percentage of recurrences after the extirpation of the hernial sac alone, (i. e., 2.87 per cent in 209 cases), is very slight, the author advises, besides the extirpation of the hernial sac, also the careful closing of the hernial canal.

Like Hakenbruch, Dreesman forms the posterior wall of the inguinal canal not only out of musculature, as is done in the Bassini method, but also from fascia. He resects the aponeurosis of the obliquus externus not directly above the inguinal canal, but further above, and in a direction parallel to the midline. After freeing the lateral portion of the obliquus tendon up to Poupart's ligament and carefully dressing the hernial sac, he sutures the medial border

of the fascia of the obliquus externus and the musculature of the obliquus internus and transversus muscles to the surrounding parts of Poupart's ligament by two mattress sutures. Over this he sutures the lateral portion of the fascia of the obliquus externus. The spermatic cord above lies as far as possible in a vertical position directly beneath the skin. The skin wound is drained to prevent the hæmorrhage that is always likely to occur with local anæsthesia. This method has been used for two years on more than one hundred cases and so far no recurrences have been noted.

GASTRO-INTESTINAL TRACT

Sever, J. W.: The Position of the Stomach in Children in Relation to Posture. *N. Y. M. J.*, 1913, xcvi, 551.
By Surg., Gynec. & Obst.

This paper is an original investigation of the location of the stomach in relation to the posture of the body. The data were obtained from an X-ray examination after a bismuth meal and a physical examination of over 80 children.

With regard to posture the cases are classified as follows: (1) Good or so-called normal posture. (2) Forward shoulders, normal dorsal curve increased forward, abdomen protuberant. This type is commonly called the forward shoulders, round, hollow back type. (3) Cases showing forward shoulders, an increased backward slope of the normal dorsal curve, but a normal lumbar spine and a flat abdomen. (4) Cases in which the predominating feature is the flat back, that is, a flattening of the normal physiological anteroposterior curves of the spine.

In Class 1 there were 12 cases presenting height and weight above the normal. In 10 the lower border of the stomach was well below the iliac crests. In one it was above the iliac crests and in the other at the lower border of the fourth lumbar vertebra. Most of these stomachs were dilated and of the sink-drain type.

In Class 2 there were 45 cases with forward shoulders, round hollow backs, protuberant abdomens. In 16 the lower border of the stomach was just above the iliac crests. In 7 cases it was just at the level of the crests and in 22 it was well below them. Many of these stomachs seemed large and dilated and none were of the normal cow's-horn shape.

In Class 3 there were 14 cases. In 9 of them the lower border of the stomach was below the iliac crests, in one at the level of the crests, and in 4 at the fourth lumbar vertebra.

In Class 4 there were 12 cases. In 8 of these the stomachs were below the iliac crests, in 3 at the level of the crests, and in one at the fourth lumbar vertebra.

In nearly every case the index of Bescher and Lenhoff was studied, as it is supposed to give an idea of the capacity of the upper abdomen. Indices over 80 supposedly show a relative incapacity of the upper abdomen and those below 80 a normal capacity.

ity of this area. The average index in 73 cases was 78, or normal, and therefore showed that little or no value was to be placed on these data as a guide to the presence or absence of visceral ptosis.

In the 83 children of average development examined the average position of the stomach was much lower than is usually considered normal. The ideal cow's-horn stomach is rare. In most of these cases the stomach was of the horizontal, or sink-drain, type and was often dilated. However, the writer believes that a low stomach in a child does not indicate a pathological ptosis, and that poor posture does not cause ptosis in children.

PAUL P. SWETT.

Sherren, J.: Diagnosis and Surgical Treatment of Gastric and Duodenal Ulcers; Report of 369 Operative Cases (Diagnose und chirurgische Behandlung des Magen- und Duodenalgeschwürs; Nebst einem Bericht über 369 operativbehandelte Fälle). *Berl. klin. Wchnschr.*, 1913, I, 1285.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author reports 369 operative cases of ulcer, 179 of them gastric and 190 duodenal. The chronic gastric and duodenal ulcer is more frequent in men than in women; the perforating duodenal ulcer, in contrast to the perforating gastric ulcer, is also more frequent in men. The author does not agree with Wilkie in his assertion that inflammations of the appendix have any connection with the etiology of chronic ulcers, or inflammatory conditions of the ileocaecal region (coprostasis) with duodenal ulcers. When typical symptoms are present, the diagnosis of gastric and duodenal ulcers is relatively easy; in atypical cases, gall-stones and chronic appendicitis, then gastric crises of tabes, lung and kidney conditions enter into the differential diagnosis.

In the differential diagnosis between gall-stones and duodenal ulcer or between appendicitis and gastric ulcer, the hyperacidity speaks for ulcer, while in differentiating chronic gastric from duodenal ulcer, high acidity points to the latter. The author found no constant difference in the results of test breakfasts in cases of ulcer near the pylorus or far removed from it near the lesser curvature. X-ray exposures after bismuth meals in cases with no deformity have at the present time little value; at no time could the author observe with any certainty a retardation in the emptying of the stomach in cases of chronic duodenal or gastric ulcers.

Increased peristalsis of the pyloric end of the stomach is observed, not in gastric conditions alone, but also in cases of gall-stones and chronic appendicitis. In all cases which were clinically doubtful the X-ray was of no value.

In 5 consecutive cases of hour-glass stomach, the diagnosis was made in 4, and wrongly made in one case of gall-stones and one of chronic appendicitis. Among the 369 cases, 58 were perforative (30 duodenal and 28 gastric). In contrast to the duodenal, in the gastric group the acute ulcer, usually perforated, was in the majority of cases situated at the anterior stomach wall and was more frequent in

women than men. The perforation rarely occurred without prodromal symptoms.

The surgical treatment of chronic gastric ulcer consists at the present time, in all cases, of gastrojejunostomy with at the same time inversion or excision of the ulcer without pylorus exclusion. Surgical treatment, which was only used as a last resort after failure of thorough internal treatment or relapse, showed 80 per cent complete cures and was connected with very slight risk to the patient. The author believes that the chronic gastric ulcer situated at the pylorus or in the fundus will heal after gastrojejunostomy, provided that it is not adherent to the pancreas or posterior surface of the liver; in the latter cases excision is preferable. In 28 cases in which the posterior, no-loop gastroenterostomy (the operation of choice) was made impossible by adhesions, the gastrojejunostomy anterior retrocolica gave the same satisfactory results. Of 151 cases, the treatment in 4 was excision, without a death; in 17, excision and gastrojejunostomy, with 1 death; in 2, gastrectomy, with 1 death; and in 109, gastrojejunostomy, with 2 deaths. In none of the latter cases was malignant degeneration observed. In 19 cases of hour-glass stomach, the treatment in 10 cases was gastrojejunostomy posterior, with no death; in 5 cases, gastrojejunostomy anterior, with 1 death; in 2 cases, double gastrojejunostomy, with no death; in 2, modified Roux operation, with no death. The results in all cases were satisfactory.

Before the operations on the stomach, the author gives his patients nothing but sterilized food for 24 hours. After the operation the patient may drink water at will, and in case vomiting occurs, food is withheld and the stomach washed out. Vomiting, however, is unusual. For three months after the operation care is taken with the diet, roast beef, ham, and bacon being absolutely excluded.

The surgical treatment of chronic duodenal ulcers, in which all medical therapy had been useless, consisted in inverting the ulcer and making a posterior gastrojejunostomy without pyloric exclusion. Of 1601 cases, only 2 terminated fatally.

The treatment of the perforating gastric and duodenal ulcers consisted in closure of the perforation through inversion or excision; in duodenal ulcers gastrojejunostomy was necessary at the same time; in acute gastric ulcers it is not only unnecessary but unwise if the normal function is not disturbed through stenosis; in chronic perforating gastric ulcer the same treatment was used as in non-perforating. The free fluid was sponged off, no irrigation being needed and drainage seldom being used. The abdominal wound was always closed, and only in a few cases was pelvic or lumbar drainage inserted.

Of 28 perforating gastric ulcers, 16 healed, 10 in the first 24 hours, the unhealed cases again being operated upon later. In contrast to hæmatemesis of young women, which in 75 cases was the first symptom, the author advises the following treatment in

bleeding from chronic duodenal and gastric ulcers: When the bleeding has stopped and the condition of the patient makes it possible (usually after 36 to 48 hours), or when the hæmorrhage continues or recurs, direct treatment of the bleeding point should be attempted, because for bleeding from a larger vessel gastrojejunostomy is insufficient.

In bleeding gastric ulcers the author advises ligation of the apparent vessel and excision of the ulcer with opening of the stomach, if necessary followed by gastrojejunostomy. In bleeding duodenal ulcer he advises the inversion of the ulcer and ligation of the gastroduodenal artery, and finally the opening of the intestine with gastrojejunostomy. With this treatment the author has had excellent results.

The so-called paralytic vomiting which follows gastrojejunostomy easily yields to gastric lavage. In 4 cases a second operation was made necessary by persistent regurgitant vomiting. Stubborn diarrhoea never occurred. In 5 cases of gastrojejunostomy posterior without loop (4 duodenal and 1 gastric), a second operation was necessary on account of a jejunal abscess situated on the anterior surface of the distal portion of the jejunum.

Excision of the ulcer, excision of the anastomosis, and a modified Roux operation brought about healing.

BLEZINGER.

Hall, J. N.: The Complications of Peptic Ulcer.
Med. Rec., 1913, lxxxiv, 566.

By Surg., Gynec. & Obst.

This study of the complications of ulcer is based upon the cases in the private practice of the author. During the past eleven years the diagnosis of gastric ulcer has been made 188 times by the author; that of duodenal ulcer, 78; a total of 266. The proportion of duodenal ulcers would be greater under the present methods of classification, since all ulcers involving the pylorus have been placed under the gastric ulcers.

Among the complications, the author considers first those arising from mechanical disturbances. Dilatation of the stomach is a very common result, either from pylorospasm, cicatricial narrowing of the pylorus, or a combination of both. Stenosis of the cardiac orifice is comparatively rare, and fortunately so, for the treatment is not easy. Stenosis of the duodenum is not uncommon and sometimes the duodenum has a caliber about the size of the little finger. Such narrowing may come either from a scar in the site of an ulcer or from contraction of adhesions. Adhesions may involve any of the neighboring structures—the liver, pancreas, spleen, gall-bladder, or the abdominal wall.

Perforation is one of the gravest complications of ulcer. Perforation into the general peritoneal cavity is rapidly followed by severe symptoms. Perforation into the lesser sac is not uncommon and is more difficult of recognition, and perforation into the bowel is occasionally found.

Extension of the infection may cause subphrenic

abscess, empyema, or even a septicæmia or pyæmia. Hæmorrhage from the site of the ulcer is usually not severe, but marked anæmia from repeated losses of blood is not uncommon. Vascular changes are not uncommon and an œdema of the extremities may develop with no cardiac or kidney changes.

Epigastric hernia is a frequent coincident of peptic ulcer, and parotitis is common and it is occasionally of the suppurative type. Jejunal ulcer, developing after a gastro-enterostomy, has not occurred in the experience of the author. Appendicitis is a rather frequent forerunner of ulcer.

Cancer is one of the most serious complications of gastric and duodenal ulcer. "Sixty-six per cent of the pylori excised by the Mayos for cancer showed origin in an ulcer, while 71 per cent of those excised under the belief that they were cases of ulcer showed cancerous changes." The author urges more general adoption of surgical treatment of ulcer.

J. H. SKILES.

Wise, W. D.: Acute Perforating Gastric and Duodenal Ulcer; A Report of Nine Cases.
Surg., Gynec. & Obst., 1913, xvii, 377.

By Surg., Gynec. & Obst.

The author calls attention to the common occurrence of gastric and duodenal ulcer and the frequency of perforation, seeking to put on his guard the general practitioner, who rarely sees more than an occasional case.

In discussing the symptoms and diagnosis, he emphasizes the importance of the history of indigestion, the suddenness of onset, the severe knife-like pains, and marked abdominal rigidity. The conditions most likely to be confused with perforated stomach or duodenum are extra-uterine pregnancy, acute pancreatitis, phlegmonous cholecystitis, pneumonia, and, most often, with chronic appendicitis. In cases where there is grave doubt as to whether it is appendicitis or perforation, the author opposes a compromise incision, thinking it better to make two incisions if the first is wrongly placed. If, after a gridiron incision has been made, the trouble proves to be a perforation, this first incision can be used for drainage. Closure of the perforation with a reinforced purse-string suture rather than excision is advised. It is thought safer to avoid performing a gastro-enterostomy unless repair of a duodenal perforation encroaches on the lumen to such an extent as to demand it. Drainage is advocated in all cases.

In the series of cases reported there were five perforations of the duodenum and four of the stomach. All of the former occurred in the first portion and on the anterior surface. Of the gastric perforations, two were on the lesser curvature. Two others were at the pyloric end, one on the anterior and one on the posterior surface. All were of sudden onset. Eight gave a history of dyspepsia. In one case there was no record. Two cases were complicated by pneumonia and one by hiccough. Seven of the patients recovered; two died, making a mortality of twenty-two per cent.

Stover, G. H.: *Röntgenology in Estimating the Operability of Carcinoma Gastrica.* *Denver M. Times*, 1913, xxxiii, 85. By Surg., Gynec. & Obst.

Stover reports five cases with seven illustrations. He follows the technique of Holtzknacht and Handek, and takes a series of röntgenograms, as he claims that numerous plates must be made to produce a full record. Certain characteristics must be followed through a series of plates of a digestive cycle, as some things seen upon a single plate lose their significance according to whether they are present or absent during the further course of the examination. A wide familiarity with the details of this branch of anatomo-physiology is necessary to read röntgenograms correctly, as it is charlatanism to pretend that a "stomach specialist" can make a diagnosis from a single plate produced by a röntgenographer.

The author believes that gastric röntgenology will revolutionize the field of gastro-enterology. Instead of a multiplicity of disease entities, based on subjective and objective symptoms, their number will be greatly reduced because several groups of them will be recognized as being simply variations of a few definite pathological conditions. This will simplify the classification and lead to greater efficiency of treatment. Surgical interference will be resorted to much oftener and earlier, and as a result months or years of suffering from curable digestive disorders will be avoided and the lives of many patients suffering from major and malignant diseases of the stomach will be saved. Also, fewer useless operations will be performed. JOHN G. BURKE.

Chastenet de Guéry, M.: *Autoplasty of the Stomach by Transplantation of an Intestinal Loop* (Un procédé d'autoplastie stomacale par transplantation d'une anse grêle). *Gaz. méd. de Nantes*, 1913, xxxi, 542. By Journal de Chirurgie.

To re-establish the continuity of the digestive tube after extensive gastrectomy, the author proposes to unite the œsophageal end of the stomach to the duodenum by using a segment of the jejunum as a graft. This method he tried once only on a dog. The operation is performed in two stages: (1) Gastro-duodenal resection which presents no unusual features; and (2) autoplasmic repair. The latter is subdivided into two stages as follows:

1. The graft is detached and the continuity in the duodenum is re-established. The segment to be transplanted is taken from the first meter of the jejunum where the mesentery is of some length and the arrangement of the vessels is such that the mesentery can be isolated sufficiently well without damaging its vitality. The continuity of the jejunum is re-established by means of a button and the break in the mesentery is carefully sutured.

2. The graft is put in place as follows: The segment of jejunum with its mesentery is passed through a non-vascular space in the mesocolon large enough so that the nutritive pedicle is not compressed. The anastomosis of the upper end

with the œsophagus is performed by either Billroth's or Kocher's method; the anastomosis of the lower end with the duodenum, by circular enterorhaphy or by means of a button.

It must be admitted that the operation is long and complicated. However, it is no more complicated than many other visceral operations, and by the use of the button in the two places mentioned above, it may be shortened considerably.

The author believes that this operation is indicated in a considerable number of cases of gastric or gastro-duodenal resection for ulcer or cancer, particularly when as the result of adhesions or any other cause it is impossible to bring the œsophageal end of the stomach into close approximation with the end of the duodenum. J. DUMONT.

Cole, L. G.: *Physiology of the Pylorus, Pileus Ventriculi, and Duodenum as Observed Röntgenographically.* *J. Am. M. Ass.*, 1913, lxi, 762. By Surg., Gynec. & Obst.

Cole declares that embryologically, anatomically and physiologically, the first portion of the duodenum is associated with the stomach, and is, in reality, a part of the stomach, not a part of the small intestine, which comes from the midgut. The first portion of the duodenum, coming from the primitive foregut, differs materially from the second and third portions of the duodenum. The contents of the first portion of the duodenum are acid like the chyme in the stomach.

The author further claims that, like the heart action, gastric action takes place in cycles marked by a systole and diastole, or "an alternating contraction and relaxation of all of the peristaltic waves." The time occupied by the formation and duration of each terminal wave forms a gastric cycle.

The term "pileus ventriculi" or "cap of the stomach" Cole applies to the first portion of the duodenum, which he concludes must be considered as a continuation of the stomach itself. Since ninety-five per cent of the ulcers which occur beyond the pylorus are found in the first inch and a half of the intestine, viz., the "cap," they should be described as post-pyloric rather than duodenal ulcers.

The "pileus ventriculi" is separated from the pars pylorica by a space varying from one-eighth to one-quarter of an inch, indicating the pyloric sphincter. The amount of contraction of the pyloric sphincter varies in proportion to the activity of the gastric peristalsis, i. e., when the gastric peristalsis is feeble, the contraction of the sphincter is weak, and when the gastric peristalsis is strong, the sphincter is more tightly contracted.

The function of the cap is that of a reservoir receiving the acid chyme propelled through the pylorus during the systole of each gastric cycle. During the early stage of digestion, the chyme is rapidly withdrawn from the reservoir cap by a rather broad, periodic peristaltic contraction, probably caused by the alternating alkaline and acid reactions in this portion of the intestine. As



Fig. 1. (Wilkie.) Congenital bilocular diverticulum of the duodenum along with duplicature of the duodenal wall. Note the hæmorrhagic pancreatitis, fat necrosis in the gastro-hepatic omentum, and gall-stones.

digestion proceeds, the cap is more completely filled with the acid chyme, and considering the presence of Brunner's glands, Cole conceives it probable that the finishing touches of gastric digestion are received here by the small portion of chyme thus isolated from the bulk of food in the stomach.

Contrary to the accepted views of physiologists, especially Cannon, Cole believes that during the systole of every gastric cycle (as above defined by him) the pylorus is open and through its lumen a small amount of liquid chyme is propelled into the cap. The period of expulsion occupies about seven-tenths of the cycle, the other three-tenths being occupied by diastole. The terminal peristaltic contraction which has meanwhile been advancing toward the pylorus now reaches the sphincter and closes it so that its lumen is entirely obliterated.

A further interesting conclusion reached is that the reflex from the replete intestine which retards the emptying of the stomach is practiced, not on the pyloric sphincter, but on the contraction which withdraws the chyme from the reservoir cap, as the duodenum is replenished from the cap and not from the stomach.

JAMES T. CASE.

Knaggs, R. L.: Retroperitoneal Rupture of the Duodenum. *Proc. Roy. Soc. Med.*, 1913, vi, Surg. Sec., 267. By Surg., Gynec. & Obst.

The author gives a description of two cases which have come under his observation and reviews 14



Fig. 2. (Wilkie.) "Diverticule perivaterien," associated with large ulcer in first part of duodenum, chronic cholecystitis and gall-stones, and advanced hepatic cirrhosis.

other cases which he has collected from the literature. Both of the cases described resulted from violence, and in both cases death resulted.

Owing to the anatomical conditions, retroperitoneal rupture does not present symptoms early enough, as a rule, to make operation of much avail. The onset is usually with considerable shock but this is usually temporary and the patient does not present the striking symptoms so often seen in intraperitoneal rupture of a viscus. Only later do the outstanding features of the case enable a probable diagnosis. These features are the following: (1) retroperitoneal extravasation of duodenal contents. This extravasation often extends into the iliac fossa and forward so as to give signs in the lower lumbar and iliac regions and continuous above with the liver dullness. The condition is often not suspected until operation, when the condition of the peritoneum attracts attention. It is usually dark-colored and there may be considerable peritonitis present in the region of the duodenum. Hæmorrhage is often found in the abdomen, and in one case on record the abdomen was found filled with blood. Emphysema in the region of the lesion is a very significant finding and points very strongly to a lesion of the duodenum. Fat necrosis is occasionally found and its presence is not of much moment.

The treatment of this condition has been very unsatisfactory because the symptoms indicating the necessity for operation do not appear early enough for the operation to do any good. Free drainage is the great essential and it may be necessary to make multiple incisions in the back to sufficiently drain

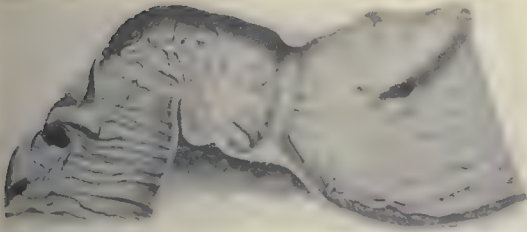


Fig. 3. (Wilkie.) "Diverticle perivaterien," along with ulceration in stomach and first part of duodenum.

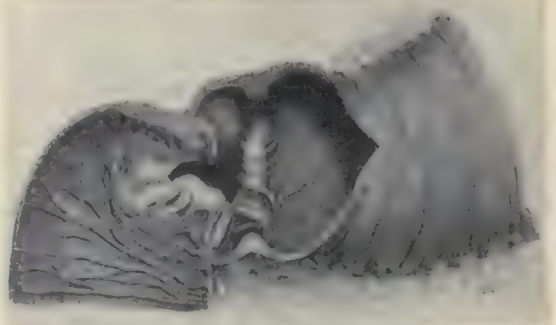


Fig. 4. (Wilkie.) Ulcer-diverticulum of first part of duodenum.

the infiltrated tissues. Until some means are devised to reach an early diagnosis of the condition the mortality will necessarily remain extremely high.

J. H. SKILES.

Wilkie, D. P. D.: Duodenal Diverticula and Duplicature of the Duodenal Wall. *Edinb. M. J.*, 1913, xi, 219. By Surg., Gynec. & Obst.

The author attempts a review of the literature and appends a description of several cases which have come under his observation. In the literature there are reports of only 68 cases of diverticulum and the large percentage of these were found in elderly people at autopsy, and in 83 per cent of the cases involved the second portion of the duodenum. The location of the opening of the diverticulum is most frequently near the ampulla of Vater or near the opening of the duct of Santorini. The sac is usually spherical in shape, and may vary in size from that of a hemp seed to that of a hen's egg. The walls of the sac are made up almost entirely of mucosa and submucosa, the muscular layers being absent, either ending abruptly at the neck of the sac or, in a few cases, tailing off gradually over the proximal part of the sac. The sac usually springs from the postero-internal aspect of the duodenum, and thus lies in contact with the head of the pancreas, which it indents.

As to the etiology of these diverticula, there are several theories. The author believes that the large proportion of these conditions are due to congenital abnormalities. During embryonic life the hepatic and pancreatic anlage are given off from the duodenum in the form of buds. It is reasonable to suppose that an extra bud from the primitive gut might eventually form a diverticulum. This theory is further supported by the facts that the diverticula in a large percentage of the cases arise near the location of these early buds, and further that accessory pancreatic lobes have been found associated with diverticula.

In the region of the first part of the duodenum occasional cases of diverticulum have been reported. These apparently arise from an old ulcer and may be associated with stenosis. In diverticula of the vestibule of the duodenum, the portion just beyond the pylorus, the etiology seems to be the anatomically weak walls in this region which, when in-

crease in intraduodenal pressure occurs, give way to form a pouching out of the wall.

Duplicature of the duodenal wall, usually in the form of ring-like constrictions, may occur at any location, but is most commonly found in the first and second portions. This condition usually presents itself as a valve-like projection of the mucosa into the lumen of the bowel and may give rise to considerable narrowing of the lumen. On closer examination these projections are seen to contain all the layers of the bowel, and the impression given is that the walls of the duodenum are too redundant for the enclosing sheath. The condition is of undoubted congenital origin and may be associated with a diverticulum.

The case reports are very interesting and especially bring out the fact that these conditions, diverticula and duplicatures of the duodenal wall, may be associated with many grave pathological conditions as a result of their presence.

J. H. SKILES.

Hartwell, J. A.: Intestinal Obstruction. *J. Exp. Med.*, 1913, xviii, 139. By Surg., Gynec. & Obst.

Whipple, Stone, and Bernheim studied the cause of death in dogs with high intestinal obstruction, by producing a closed loop of the duodenum, beginning

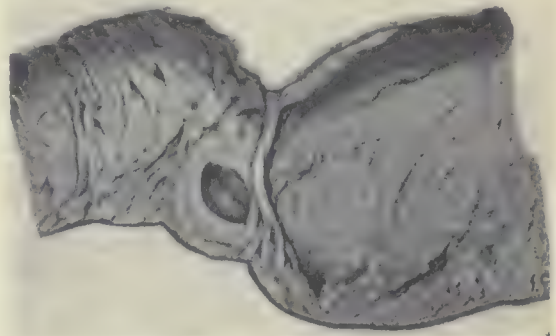


Fig. 5. (Wilkie.) Wide-mouthed diverticulum of the duodenal vestibule.

just below the pancreatic ducts and ending beyond the suspensory ligament. This portion was isolated from the remainder of the intestinal tract by tying a heavy ligature tightly at these two points and burying it under an inverted layer of the peritoneum, after which a gastro-enterostomy was done. As dogs so treated died in from 36 to 72 hours, the authors inferred that there developed in the closed loop a poisonous material, the absorption of which caused death. Since the closed loop contained neither gastric secretion, bile, nor pancreatic juice, the conclusion seemed inevitable that some alteration in the loop function was responsible for death.

A series of careful and well-controlled experiments was then undertaken to study the nature, and if possible, to determine the source of the poison. The method employed was to produce the isolated loop, collect the contents, sterilize them by heating to 60° C., filtering them, and then, after autolysis, to inject them into a healthy dog, intravenously, subcutaneously, or intraperitoneally. It was demonstrated in this way that dogs so injected died promptly. Further, the authors were unable to isolate such a poisonous material from the normal intestine by any method of treatment; and if the mucosa of the loop were first destroyed by a fluoride, the poisons did not appear. Lastly, some dogs died within a few days, when the loop was drained externally, there being an absorption directly from the mucosa, and not from the lumen. The authors therefore believe that there is no escape from the conclusion that a poisonous substance is formed in this closed duodenal loop, absorbed from it, causing intoxication and death. Injection of this toxic substance into a normal dog produces intoxication and a reaction more intense than, but similar to, that developing in a closed-loop dog. In substance, they claim to have proved that a closed loop of intestine, without undergoing any morphological change, produces a toxic substance which is absorbed and causes death. Moreover, they infer that a similar condition exists in simple intestinal obstruction, and that here also death results from the absorption of this same poison.

Hartwell fails to find any evidence in the authors' experiments, as published, to justify these claims. On the contrary, he believes that the protocols definitely show a damage to the intestinal wall, and that the toxic substance they are dealing with arises from this source. In the absence of this damage, no toxæmia is present except that produced by the loss of water in the vomitus. He submits a review of their protocols in support of this view.

A study of their cases clearly demonstrates that the length of life is in inverse ratio to the damage occurring in the intestine. All the animals were under practically identical conditions as far as the stagnation of the intestinal contents is concerned, and if the poison arose from that source, or from functional changes in the mucosa, they should have

lived approximately the same length of time. A simple explanation is forthcoming for the varying damage to the intestine. When antiperistalsis is sufficient to empty the intestine toward the stomach, no damage results. When this is absent the accumulated secretions distend the bowel until the circulation is obstructed and the damage results. The administration of saline, subcutaneously, exerts no influence, either on the production of the poison under this condition, its absorption, or its elimination, and the dogs sicken and die in spite of this treatment.

The author's experiments show that many other examples might be cited to show that in the absence of damage to the intestine, no symptoms of poisoning arise, provided the water lost by vomiting is replaced, and in the presence of such damage no amount of saline will, to an appreciable extent, affect the development of poisoning or prevent death. The conclusion seems inevitable that the only poison present in intestinal obstruction arises from the damage secondary to the obstruction and not from the stagnation of intestinal contents or an altered function of a normally appearing mucosa.

As final proof of Hartwell's position, it is reported that by exercising great care in avoiding damage to the intestinal wall, it is found possible to keep dogs with the closed loop alive for a comparatively long period.

The application of these facts to intestinal obstruction in man must be made with reserve. The human intestine is apparently incapable of withstanding the same amount of distention as a dog without damage, and consequently a poisoned condition occurs earlier in man. However, there are two important results of this experimental work. The need of large amounts of saline subcutaneously is proved, and has been used by the author with advantage, patients having readily absorbed three to six quarts in 24 hours. There is no necessity of draining out the intestinal contents unless the bowel is damaged. Simple stagnation does not yield a poisonous substance, and consequently the release of the obstruction by operation is sufficient. When, however, strangulation has begun, the material above the obstruction should be removed, and if extensive damage exists a continued drainage through an enterostomy may be needed. **GEORGE E. BEILBY.**

Kahn, L. M.: The Absence of the "Sausage-Shaped Tumor" and the "Mass per Rectum" in Intussusception in Infants. *Med. Rec.*, 1913, lxxxiv, 526. By Surg., Gynec. & Obst.

This simply emphasizes the fact that in the early stages of intussusception, and even, in some cases, in the later stages, a tumor is not palpable. This tumor may be located beneath the spleen and be entirely covered by that organ. One should not delay, simply because the sausage-shaped tumor and mass per rectum are not to be found. X-ray may help in the diagnosis of the condition.

C. G. GRULEE.

Schubert, G.: Contributions to Post-Operative Ileus (Beiträge zum postoperativen Ileus). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxiii, 500.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Post-operative ileus appears ten to fourteen days after laparotomy. The causes are: (1) Mechanical irritation of the intestines and peritoneum; (2) infection of the abdominal cavity; (3) agglutination of intestinal loops to wounds and bands of adhesions; (4) closure of mesenteric vessels. A differential diagnosis between paralytic and mechanical post-operative ileus is of secondary importance for the treatment.

Prophylaxis. Avoid too severe laxation before operation. The evening before, use enemas but not laxatives. Do not starve the patient during the preparatory treatment; only the supper the evening before the operation should be omitted. A careful use of laparotomy pads overcomes the disturbing element of distended bowels. All wound surfaces and stumps must be carefully covered with peritoneum.

After-treatment. The bowels are stimulated by hot applications. If the bowels are sluggish, physostigmin is given, but not glycerine and water enemas. Vomiting with obstinate retention of gas is treated by irrigation of the stomach and high colonic flushing. If obstruction of the duodenum is suspected, the patient is placed upon the left side and the stomach is washed out. Should these measures fail, the abdomen is again opened. An enterostomy should be avoided if possible.

In paralytic ileus a long intestinal tube is inserted through the rectum as high up as possible and under control of the hand of the surgeon. If the bowel remains distended, even if a good evacuation is obtained, the same is incised or punctured and sutured into the laparotomy incision. In post-operative diffuse peritonitis the abdomen is opened on both sides and irrigated; the bowels are emptied by a double bilateral enterostomy. In mechanical ileus the adhesions are loosened and the intestinal loops are tested to determine their viability. If a suspicion of gangrene exists, a primary resection of the bowel is performed, provided the general condition of the patient permits it; otherwise enterostomy. The earlier the abdomen is reopened, the better the results will be.

MICHAEL.

Sasaki, J.: The Comparative Value of Free Flaps from the Omentum, Peritoneum, and Mesentery for Strengthening Sutures (Vergleichende Studien über den Nahtverstärkungswert des ungestielten Netz-, Peritoneal-, Mesenteriallappens). *Deutsche Ztschr. f. Chir.*, 1913, cxxiii, 62.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Sasaki carried out numerous experiments on dogs to determine whether free flaps from the omentum, peritoneum, or mesentery can be used safely to reinforce unsatisfactory sutures in stomach and intestinal wounds and to prevent peritonitis. He decided in the affirmative. In his experiments the

small intestine was resected and the ends brought together with only a single suture. Instead of suturing the serous membrane, a transplanted flap was applied. When peritoneal or mesenteric flaps were used, the animals lived, but when flaps from the omentum were used they died. This fact the author attributes to the slighter and more irregular development of the elastic fibers in the omentum, which makes it impossible to apply it as closely to the intestine as the flaps from the peritoneum and mesentery.

VON TAPPEINER.

Frank: Atresia of the Anus (Über Atresia Ani).

Monatschr. f. Geburtsh. u. Gynäk., 1913, xxxviii, 340.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In concluding a report of two successfully operated cases, Frank advises early operation. Postponing the operation a few days causes the children to lose weight and strength; in cases with an internal fistula the danger of an ascending infection of the urinary tract is increased. On account of the danger of gangrene it is inadvisable to attempt drawing the blind pouch downward, especially if the entire sigmoid is absent. It is better to perform a laparotomy and make an artificial anus.

ZINSSER.

Barnes, R. H.: A Method of Operating on Fistula Without Cutting Muscular Tissue. *Proctologist*, 1913, vii, 126.

By Surg., Gynec. & Obst.

The author believes that the usual operations for fistula are too mutilating and that cutting the sphincter muscle, even at right angles, will occasionally result in a case of incontinence. He believes that dissection and suture operations are open to serious objection, because of working in a region that is always contaminated by infectious material. He condemns the indiscriminate and routine use of the probe, as also the injection of fluids or semifluids for diagnosis.

The author describes a new method for operating upon fistula in which he does not cut the sphincters. He has used this method for the past two years.

An incision parallel to the external sphincter muscle and directly over the abscess cavity is made extending just through the skin. Through this incision all of the scar tissue of the fistulous tract is removed, up to and including the internal opening, care being taken to avoid all possible injury to normal tissue, especially muscle. An incision is then made at the skin margin of the anal canal, with its center crossed by an imaginary vertical line that passes through the internal opening. This incision is connected with the internal opening by dissecting a muco-cutaneous flap. Gauze drainage is placed in this submucous tract, extending up to the internal opening, and is kept there until the external wound has healed. The external wound is treated the same as if it were an acute abscess cavity. When it has healed, there is left a submucous tract which can be incised under local anæsthesia.

FLOYD B. RILEY.

Zobel, A. J.: A Further Consideration of Sir Charles Ball's Operation for Internal Hæmorrhoids. *Proctologist*, 1913, vii, 138.

By Surg., Gynec. & Obst.

The author reviews Ball's technique and remarks that he has followed very closely the work of many of the best operators in this country and abroad and is quite sure that adverse results obtained by them are due to their neglect to follow rigidly the technique described by Ball.

In order to prevent œdema and eversion of mucous membrane which follows incision along the mucocutaneous line or the other extreme, viz.: stricture which may follow incision at the outer edge of the revoluted cutaneous ring, Ball commences his dissection at a point between the pectinate line and the outer edge of the cutaneous ring. The incision is curved around the base of the pile and its greatest convexity does not involve more than one-third of the cutaneous ring, while the ends terminate in mucous membrane at each side of the pile. The exactness of this incision is essential to success. Zobel follows the remaining steps of the Ball operation in detail, except that he does not crush the base of the pile so heavily as was done in the original operation. The objections and their answers follow:

1. That "the post-operative pain is greater than after the usual ligature or the clamp and cautery method." Zobel thinks that the use of fine, strong, linen thread, instead of silk, goes far toward preventing post-operative pain. He believes that gentle and not unnecessary dilation of the sphincters at the beginning of the operation is another element toward its prevention. In his own experience there was no pain to speak of.

2. That "the duration of the healing period is not shortened because of the sloughing of the ligature from either the skin ring or pedicle before union takes place, leaving the wounds to heal by granulation." The healing period, in the author's own cases, was shorter than after the other operations.

3. That "there is a necessity for unusual watchfulness that all ligatures may be removed as they slough." The author was careful to introduce the skin suture just in the edge of the flap and never experienced any trouble about the coming away of the ligature in the usual time.

4. That, "failing to secure primary union, skin tags frequently remain for subsequent removal." If Ball's technique is followed skin tags will not occur.

5. That "no time is saved by this modification of the ligature operation." The author agrees with this statement and believes that in reality the time is somewhat longer than usual.

6. That "there is danger of secondary hæmorrhage from an early tearing off of the pedicle by traction." If the pile is not crushed so heavily as in the Ball technique and the ligature not left long and hanging out of the anus to be pulled upon, there is no unusual danger of hæmorrhage.

FLOYD B. RILEY.

LIVER, PANCREAS, AND SPLEEN

Case, J. T.: Röntgenoscopy of the Liver and Biliary Passages with Special Reference to Gall-Stones. *J. Am. M. Ass.*, 1913, lxi, 920.

By Surg., Gynec. & Obst.

Contributory evidence of considerable value regarding hepatic lesions may be often obtained by the use of the X-ray. The upper border of the liver, normally smooth and coincident with the shadow of the diaphragm, may show nodules. The shadow of the inferior surface is ordinarily confused with that of the subjacent organs, but may be emphasized by inflation of the stomach or colon. Signs of subphrenic abscess include (1) limited and painful diaphragmatic movement; (2) high projection of the diaphragmatic contour; (3) pulmonary involvement from infection or rupture; and (4) if gas be present, the appearance of the fluid level below it.

For a number of years it has been thought scarcely worth while to submit a patient with gall-stones to a röntgen examination. This view was founded on the fact that the principal constituent of gall-stones is cholesterol. In Case's last thousand digestive tract examinations, however, he identified gall-stones radiologically in 48 cases,—about 5 per cent. He compares this with W. J. Mayo's estimate of a 0.5 percentage frequency of gall-stones in persons of all ages, a 5 to 8 percentage frequency in women over 50 and a 2 to 4 percentage frequency in men over 50. Case is of the opinion that gall-stones may be shown radiologically in 40 to 50 per cent of the cases in which they exist. He explains this belief on the grounds that radiological technique has vastly improved with regard to soft-tissue detail, plates are made more often anteriorly (as after the bismuth meal), screening is done more carefully, and stones contain opaque material (pigment, lime) more often than is supposed. Gall-stone shadows must be differentiated from shadows due to calcareous deposits in the costal cartilages (stereoscopy), renal calculi and calcareous deposits in tuberculous kidneys (pyelography), and calcified mesenteric lymph nodes.

Contributory evidence of the presence of gall-stones elicited after the bismuth meal includes hepatofixation of the stomach, with displacement of the pylorus to the right and upward, a tender spot localized on the outer side of the duodenum, the demonstrability of Riedel's lobe, an unusually high position of the hepatic flexure, rapid emptying of the stomach, manifestations of spasm in the stomach, and aberrancies of the sigmoid.

ALBERT MILLER.

Waljaschko, G. A., and Lebedew, A. A.: The Treatment of Injuries of the Liver, Spleen, and Kidneys (Zur Frage der Behandlung von Leber-, Milz- und Nierenwunden). *Russk. Vrach*, 1913, xii, 989.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

In a series of experiments on dogs the authors used free fascia transplantation for injuries of the

liver, spleen, and kidney. In all cases the blood was drawn from the wound before the sewing on of the fascia, because its presence hindered the healing of the fascia. They resected parts of the organs, covered the surfaces of the wounds with flaps of fascia fixed to the capsule with a few sutures, and obtained prompt cessation of bleeding and complete healing. Microscopic examination after thirty days showed complete preservation of the fascia, normal tissue under it, and no formation of connective tissue between; only in the kidneys could they detect the zone of cortical necrosis described by Barth and partial necrosis of the kidney elements. In other experiments perforating wounds of these organs were made and fascia flaps drawn through the wounds and sutured to the capsule on both sides, with the same results.

In a third series of experiments the kidneys were cut into several parts, the wounds coming down into the kidney pelvis. At the same time the kidney was decapsulated, then wrapped in a flap of fascia that enclosed the whole organ. Functional tests with indigo-carmin after periods of from 15 to 40 days showed no difference between the normal kidney and the one operated on. In two cases, hyaline cylinders were found in the urine; in the third, in which the severest injury had been done, there were no pathological findings in the urine; on post-mortem, the fascia was found loosely adherent to the kidney, enclosing it completely. Only insignificant linear contractions were visible at the site of the wounds, and when the kidney was cut through it was difficult to see the places where the wounds had been. Microscopically, there was no zone of cortical necrosis and the zone of partial necrosis was small.

These splendid results in multiple wounds of the kidney is attributed by the authors to the fact that, by their method, ideal adaptation of the wounded surfaces is obtained and the tissue-destroying sutures through the parenchyma of the organ are avoided. The secondary contraction, often observed in decapsulation of the kidney caused by the formation of a new connective-tissue capsule, has never occurred in their cases, though they used the method once for a simple decapsulation. Therefore they recommend it in cases of decapsulation. They sum up their results as follows:

1. Fascia placed on a bleeding wound surface acts as a living tampon.
2. In free fascia transplantation for wounds of organs, only a few superficial sutures need be used and ligatures inside the organ which injure the tissue severely can be avoided.
3. The transplantation of fascia does not cause any connective-tissue proliferation in parenchymatous organs.
4. The wrapping of a torn organ in a flap of fascia is the best substitute for suture and does not cause any atrophy of glandular tissue.
5. The kidneys can recover from multiple wounds and function satisfactorily.

6. The withdrawal of the blood from the wounds of parenchymatous organs is an important point for their recovery.

7. Wrapping the decapsulated kidney in a flap of fascia prevents secondary contraction of the organ.

RIESENKAMPFF.

Buckley, P.: True Total Enucleation of Two Hydatid Cysts from the Same Liver. *Brit. M. J.*, 1913, ii, 725. By Surg., Gynec. & Obst.

A girl, age 13, presented an epigastric swelling slightly to the left. A second tumor was located in the position of the right kidney. At operation, a tumor the size of a tennis ball was found in the left lobe of the liver and one a little smaller in the right lobe. The right cyst with its capsule was removed entire. The left was also removed in the same way except that the capsule was ruptured. The right cavity was packed with gauze. The left was closed with cat-gut and a rubber drain put down to it. Thirteen months later the child was in normal health. The author states that what is usually called the capsule is really the ectocyst and derived from the cyst itself rather than the organ in which it lies. He states the removal of the endocyst in his opinion is not sufficient. The ectocyst layer must be removed when possible without grave danger from hæmorrhage.

M. S. HENDERSON.

Erdmann, J. F.: Acute Pancreatitis. *Ohio St. M. J.*, 1913, ix, 403. By Surg., Gynec. & Obst.

The author considers at length the marked toxæmia which so often is an accompaniment of acute pancreatitis. The theories as to its cause are many and no positive proof has been established as to which one is correct. The anatomical arrangement of the ducts would point toward a backing up of the bile into the pancreatic ducts as a possible cause. That this is an important point is seen from the number of gall-tract conditions which are associated with pancreatitis, and it has also been shown experimentally that injection of bile into the pancreatic ducts will produce an inflammation. Cultures of bacteria act more markedly on the pancreas when they are given together with bile. As to just what causes the toxæmia no one knows. Guleke believes death in his necrosis experiments was due to an intoxication with trypsin. Speese, Sailer, and Torrey believe the toxæmia is due to an increase of the globulin content of the blood.

The pathology of acute pancreatitis may be classed as follows: hæmorrhagic, sloughing or gangrenous, and suppurative. In the hæmorrhagic there is marked oedema and infiltration in the retrotransverse colic area. The gland is swollen and tense and shows up as blue-black through the peritoneum. Fat necrosis is evidenced by the yellowish white plaques scattered through the omentum and peritoneum. These are due to the deposition of fatty acids obtained from the splitting of the fat into fatty acids and glycerin. These fatty acids may later unite with calcium salts to form calcium soaps.

The sloughing and suppurative forms are merely successive stages of the hæmorrhagic.

The onset of the disease is usually marked by a sharp pain accompanied by various degrees of shock, rapidly followed in some cases by a profound toxæmia, characterized by a peculiar cyanosis, or lividity, especially marked on the abdomen and in the flanks. The pain is usually of a more severe type than that of an appendicitis or gastric perforation.

Hiccough is a symptom of relative frequency. Vomiting accompanies and follows the pain onset. There is usually a history of previous digestive disturbance with gall-bladder or duct invasion. A tumor in the epigastrium develops in a proportion of the patients, but usually only after the third day. The diagnosis is made on the history of previous digestive disturbances and the intense acute onset of the condition in the epigastrium.

Owing to the rapidly fatal course, the treatment should consist of early operation. The author uses a median or lateral incision and drains through the gastrohepatic, gastrocolic, and transverse mesocolic structures. The peritoneum over the pancreas is freely punctured with a blunt instrument, or torn, and in the majority of instances free blunt punctures are made in the body of the pancreas.

J. H. SKILES.

Kopylow, N. W.: Splenectomy in Malarial Diseases of the Spleen (Über Splenektomie bei Malariaaffektion der Milz). *Arch. f. klin. Chir.*, 1913, ci, 708. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Kopylow gives a historical résumé of the development of splenectomy. The operation began to be used quite frequently in the '90's for pathological changes in the spleen, especially in the Balkan peninsula and in the Caucasus, where there is a great deal of malaria. Jonnesco, in Paris in 1900, reported 28 cases with 8 deaths; Leonte, of Bucharest, 12 cases with 4 deaths; Michailowski, 15 cases with only one death from pneumonia. Nannati of Grossiti, performed 9 splenectomies for malarial spleen, only one case recovering. Ramoli operated 9 times, but twice could do nothing more than exploratory laparotomy because of extensive adhesions. Solieri, in 1909, reported three cases, all of which recovered, but like most of the Italian surgeons, he recommends operation only in case of displacement and torsion of the pedicle. Papainnow, of Athens, in 1910 reported 14 cases with 3 deaths, and Frukilstein, 17 cases in Russia with 10 deaths. The author has collected the history of these and a few other scattered cases, with 13 of his own, and finds that there have been about 200 splenectomies done for malarial affections of the spleen, with an average mortality of 25 per cent.

He describes the pathological changes in the splenic tissue as follows: There is marked proliferation and deposition of pigment. Obliteration of the vessels causes atrophy of the parenchyma; the consistency of the organ becomes firmer and it increases

in size, sometimes up to thirty times its original size, thus causing pressure on the neighboring organs with functional disturbances. It causes inflammation, which results in adhesions. There is often prolapse of the spleen, and it even sometimes enters a hernial sac. The chief danger of such a spleen, however, lies in the possibility of torsion of the pedicle and its consequences, both acute and chronic. As a result of trauma there are frequently blood cysts in the spleen from hæmorrhage within the capsule. Sometimes, however, the capsule ruptures, and there is intra-abdominal hæmorrhage; with severe consequences if operation is not performed at once. The prognosis in splenectomy depends upon the severity of the disease and the general condition of the patient. The smaller and more movable the spleen is, the more favorable is the prognosis, as the adhesions may be so great as to render operation impossible.

The following are indications for splenectomy in malarial disease: (1) Rupture of the spleen and torsion of the pedicle; (2) enlarged and freely movable spleen; (3) enlarged, painful, immovable spleen when internal treatment gives no results. Contra-indications are: (1) Severe cachexia and hydræmia, with marked reduction in hæmoglobin content — less than 40 per cent; (2) severe atrophic cirrhosis; (3) poor general condition, with disease of the digestive or genito-urinary organs; (4) very extensive adhesions.

In the course of two and one-half years (1909-1911) the author performed 13 splenectomies and had 3 done by Krülow. The spleen was only movable in one case, being fixed by adhesions in the others. In one patient there were two cysts, and one patient was operated on for rupture of the spleen. There were three deaths, one from peritonitis, one from thrombosis of the vessels and necrosis of a coil of the small intestines, and one from partial necrosis of the stomach wall after the loosening of very firm adhesions. The author prefers incision at the outer edge of the rectus muscle, supplemented if necessary by transverse incision. By this method the whole extent of the spleen is laid bare. Ligation of the pedicle before loosening the adhesions can only be done in small spleens; in large ones it can only be done after all adhesions are freed, preferably with coarse silk, either ligating it in two parts or else ligating each vessel separately. In doing this the pancreas must be treated with great care. Ligatures of the comparatively thin stomach wall may cause necrosis. If the spleen is small and the hæmorrhage insignificant, the abdominal wall wound may be entirely closed; otherwise the spleen must be tamponed. The mortality varies with different surgeons from 7 to 60 per cent; in the author's cases it was 23 per cent. Examination after six months to a year showed that all the patients felt well, including one workman who had been operated on six years before. By operating only when the operation is really indicated the mortality may be much reduced. VOSWINCKEL.

SURGERY OF THE EXTREMITIES

DISEASES OF BONES, JOINTS, MUSCLES, ETC.
GENERAL CONDITIONS COMMONLY
FOUND IN THE EXTREMITIES

Weiss, K.: **Hypophysin Treatment of Rickets**
(Zur Frage der Hypophysentherapie bei Rachitis).
Therap. Monatsh., Berl., 1913, xxvii, 490.
By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Histories are given of a series of cases of mild and severe rickets in children, which improved markedly in the comparatively short time of from six to ten weeks on the administration of tablets of extract of the hypophysis. GENEWEIN.

Hurwitz, S. H.: **Osteitis Deformans, Paget's Disease.** *Bull. Johns Hopkins Hosp.*, 1913, xxiv, 263.
By Surg., Gynec. & Obst.

This report by Hurwitz includes six cases of osteitis deformans. Three of these the author found in the records of over 30,000 medical admissions to the Johns Hopkins Hospital, and three were recorded in the much larger number of admissions to the Johns Hopkins Hospital Dispensary. Although all of the six cases present essentially the features of the disease described by Paget, the comparative rarity of the affection prompted the author to put them on record. Clinical records have been very thoroughly taken and recorded and they include careful measurements, photographs, and X-rays. The subject is then discussed from various phases of pathology, etiology, and clinical signs and symptoms.

With reference to the etiology, the author believes that the most interesting and stimulating view is that which regards osteitis deformans as a result of faulty metabolism, due to a perversion of the internal secretions, and he points to the fact that recent additions to our knowledge of the influence exerted by the hypophysis and the parathyroids in calcium metabolism should have called forth such views.

From the author's observation of these cases, he believes that in the present state of our knowledge the assumption of a casual connection between the internal secretions and osteitis deformans is mere speculation; but as certain authors have pointed out, the metabolic processes in this disease are very little understood and it may be that accurate metabolic studies in osteitis deformans will help to solve the problem of its causation.

GEORGE E. BEILBY.

Ely, L. W.: **Diseases of Joints and Bone Marrow.** *Am. J. Surg.*, 1913, xxvii, 335.

By Surg., Gynec. & Obst.

Continuing from a previous paper, Ely classified chronic arthritis of the spine as one of the forms due to the same cause as in other joints. The pathology is an ossifying process involving the cartilage of the joint surfaces and of the ligaments. The

new bone formation may extend upon the ribs or encroach on the spinal canal. The symptomatology consists of pain, stiffness, and deformity; either a long posterior curve or an obliteration of normal curves resulting in a "poker back." A differential diagnosis from Pott's disease is sometimes important. In Pott's disease there is rarefaction instead of hypertrophy, the lesion is more localized, it is not often complicated by diseases of other joints, and abscess is more frequent. Important points in treatment are: the removal of the source of infection, rest, and protection.

Charcot's joint. Ely regards this as primarily a lesion of the lymphoid marrow and synovia, probably of luetic origin, and refers to it as "tabetic osteoarthropathy." The pathology consists of a low grade eroding inflammation localized to certain spots, resulting in a joint filled with fluid in which float pieces of the killed bone. The joint becomes loose, subluxated and "wobbly," and its characteristic histological structure is lost. The onset is a sudden occurrence of hard, cedematous swelling without pain. Crepitation is obtained, and distortions occur. The general neurological signs of tabes are present. Conservative treatment is best. Resection seems to be good for ankles but poor for knees.

Ankylosis, in its modern meaning, is joint stiffness. The term contracture should replace the term "fibrous ankylosis." If any motion is present the ankylosis is not bony. Mobilization is not indicated and, if there is an active process, may do harm. Old tuberculous joints ankylosed in deformity should be carefully reduced and fixed in correct position. Milder forms of fibrous ankylosis may yield to massage. Arthroplasty may be done for bony ankylosis. For this, the interposition of autoplasmic flaps of fascia is better than introduction of any foreign matter. Joint transplantation is at present on an experimental basis.

W. A. CLARK.

Owen, S. A.: **Syphilitic Diseases of Joints and Bones in Childhood; Their Differential Diagnosis from the Medical Standpoint.** *Med. Press & Circ.*, 1913, xcvi, 318.

By Surg., Gynec. & Obst.

A very high percentage of congenitally syphilitic children give a strong positive Wassermann reaction, so that a negative result is stronger evidence against congenital syphilis than a negative result obtained in cases of acquired syphilis in older persons. In infants under one year of age, joint affections are rarely due to rheumatism. Some confusion may arise in atypical cases of infantile scurvy.

Scurvy is more likely to be symmetrical, and the physical signs point to a lesion of the shaft rather than of the joint. Spongy gums, pseudoconjunctival hæmorrhages, epistaxis, hæmaturia and

melæna do not occur in syphilis. More frequently the constitutional state in recent scurvy is good. In melanotic children, especially those suffering from chronic enteritis, œdema of the limbs can hardly be mistaken for a specific lesion. In such cases tetany is common. In rickets of older children hyperæsthesia, subjective pains, pseudoparesis and frequently an accumulation of fat occur together with the other classic signs of rickets. In cases of early poliomyelitis, the toneless, flabby state of the muscles, the definite onset of the process, and the loss of the deep reflexes will differentiate. True rheumatism in infancy is practically unknown. The co-existence of any evidence of myocarditis, endocarditis, pericarditis, and choreiform movements or nodules point to rheumatism. In purpura rheumatica there are pain, swelling of the joints, and an œdema of the limbs. In erythema nodosum the appearance of the rash may be preceded by pain in the limbs. In leukæmia, especially the acute form, joint swellings and œdema are noted and all of the superficial glands are enlarged. The blood shows a diminution in the red blood corpuscles, an enormous increase in the white blood corpuscles and, in the lymphatic type, a very great relative increase of the lymphocytes. Although gonorrhœal ophthalmia is very common in infancy, arthritis is quite infrequent. The swelling is apt to extend beyond the joint cavity. The joints of the knees and the wrists are most commonly involved. Cases of symmetrical synovitis rarely require differentiation. In hæmophilia there is a sudden effusion into the joints which occurs spontaneously as the result of injury. The family history usually clears up the diagnosis. Charcot's joint practically never occurs in children. The youngest patient seen by the author was a youth of sixteen. The classic signs are partial subluxation of the joint, severe crepitus, hypertrophied synovial folds, a less normal outline, steady progression, and absence of pain, together with the general signs of tabes. Gout and rickets rarely require differentiation. **FREDERICK G. DYAS.**

Billings, F.: Chronic Local Infection as a Causative Factor in Chronic Arthritis. *J. Am. M. Ass.*, 1913, lxi, 819. By Surg., Gynec. & Obst.

Billings reports the clinical research confirming his previously expressed views as to the etiology of arthritis. The focal disease was usually situated in the head. Most frequently this was a streptococcus infection in the faucial tonsils. Occasionally the cause was a chronic alveolar abscess and chronic sinusitis due to streptococcus infection. In mono-articular osteo-arthritis of the hip especially, chronic hypertrophic prostatitis with residual urine, chronic cystitis, and infection with the colon bacillus seemed to be etiological factors. Chronic gonorrhœal and streptococcus infection of the seminal vesicles may also cause systemic infection and arthritis in particular.

The dominant organism found in abscesses and sealed crypts of the faucial tonsil are streptococcus

viridans and streptococcus hæmolysis. Rosenow's experiments show that the same organisms may be changed by cultural methods so that in mediums they may show progressive phases of transmutation ranging from a type of streptococcus to the pneumococcus. At different stages of transmutation he has, at will, produced in the inoculated rabbit, suppurative arthritis; at another phase, multiple proliferating arthritis, endocarditis, pericarditis, and myocarditis; at another phase, myositis of the skeletal muscles; at another phase, a virulent type which produces arthritis with proliferative and degenerative joint lesions; and at another phase, typical pneumonia. These experiments probably clear up the difference in results and the varying types of streptococci described by many investigators.

The morbid anatomy of experimental chronic arthritis is the same as that found in man and is the specific reaction of the infectious organism.

Arthritis deformans may be differentiated from other types of chronic arthritis by the characteristic coincident involvement of periarticular and articular structures, chronic myositis, consequent contractions of muscles, secondary trophic changes due to a faulty metabolism, malnutrition, etc.

The treatment and management must comprise: (1) Removal of the cause; (2) improvement of immunity by rest, personal hygiene, including good food, pure air and sunshine, rational calisthenics and physical culture, moral support, and cheerful environment. Autogenous vaccination may be added to still further improve immunity.

L. G. DWAN.

Davis, D. J.: Chronic Streptococcus Arthritis. *J. Am. M. Ass.*, 1913, lxi, 724.

By Surg., Gynec. & Obst.

Streptococcus infection of joints is due to the mucosus variety of the organism. Diplococcus rheumaticus is also prone to attack joints. These cases can be differentiated clinically and by the history from other forms of deforming arthritis. The more acute attacks resemble acute articular rheumatism in symptoms, but, in contrast, they do not yield to salicylates, but are persistent and leave permanent joint changes. The pharyngeal ring is the most common entrance of the infection, and a history of tonsillitis is of great value in establishing a diagnosis. Davis found a hæmolytic streptococcus in tonsils of thirty-eight out of forty cases of arthritis from which the tonsils were removed. The joint effusions examined from four cases showed no bacteria. Blood cultures made from ten cases were negative.

The organism found forms a moderately wide zone of hæmolysis on blood plates, is slightly smaller, and forms shorter chains than the other streptococci, and although not highly virulent may produce arthritis when injected into animals in large doses.

The organisms may be recovered from the joint cavities of these animals early in the infection. Endocarditis results in about ten per cent. In

many of the cases studied, complete cure resulted from extirpation of the tonsils. Treatment with autogenous vaccines is valuable. In one case, a cure was effected by three doses in two weeks.

W. A. CLARK.

Magnus: Experimental Investigations in Regard to Purulent Arthritis and Secondary Symptoms (Experimentelle Untersuchungen über eitrige Arthritis und Folgeerscheinungen). *Zentralbl. f. Chir.*, 1913, xl, 1184.

By *Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.*

Staphylococci of slight virulence were injected into the joints of rabbits, and the animals killed at different times. The joints were preserved *in toto* and cut. The findings were as follows: Early and extensive necrosis of the articular cartilage, sequestration of the cartilage or substitution of connective tissue followed by ankylosis; all stages of acute and chronic inflammation of the capsule going over into obliteration; contraction of the joints with extensive adaptation of the rough forms of the articulation ends as well as of the finer structure of the spongiosa to the new position of the joint. Injections of tincture of iodine into the infected joint had no therapeutic effect.

SCHULTZE.

Elmslie, R. C.: Physical Treatment of Joint Diseases, Particularly Tuberculosis (Die physikalische Behandlung der Gelenkkrankheiten, im besonderen der tuberkulösen Gelenkkrankheiten). *Ztschr. f. orthop. Chir.*, 1913, xxxii, 405.

By *Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.*

The etiology and pathology of the joint affection should be determined before a course of treatment is decided upon. In the first place, it must be determined whether there is an acute inflammation or whether reparative processes are going on. In non-tuberculous diseases, the answer to this question determines whether the joint should be fixed or mobilized. The treatments possible in tubercular diseases are the following: 1. Rest by removing the body weight and forced extension of the joint; (2) fixation of the joint in a suitable position. The choice between the two treatments depends upon the nature of the joint affection. The author did not get good results from the ambulatory treatment of joint tuberculosis in polyclinic patients. Fifty-six per cent of them had suppuration and the resulting deformities were rather severe. Elmslie, therefore, believes in the hospital treatment of these cases.

BÉLA DOLLINGER.

Dutton, T.: The Treatment of Tuberculous Joints by the Internal and External Use of Iodine. *Med. Press & Circ.*, 1913, xcvi, 348.

By *Surg., Gynec. & Obst.*

The author strongly condemns the use of tuberculin and the knife in the treatment of tuberculous joints, although he admits that there have been some brilliant successes following this treatment.

He himself has been curing case after case by the internal and external use of iodides, with the

addition of a carefully constructed diet. Iodide of iron is given internally in large doses, and a soluble iodide ointment is applied twice a day to the affected joint. The patients are advised to keep windows closed, to avoid cold and damp air, especially night air, and to take every advantage of warm, dry air and sunlight.

Two recent cases are cited. One was that of a young woman twenty-two years of age, with tuberculosis of the right knee-joint. The treatment described above was begun March 12, 1912. By January 2, 1913, the leg was quite normal and the motion in the right knee-joint was as good as that in the left, except when going up stairs.

The second case was tuberculosis of the wrist-joint of a young girl fifteen years of age. The patient had had hospital care for four years. On July 17, 1912, the iodide treatment was begun and continued until a pustular rash came out over her forehead and face. By October 2 she had gained twelve pounds in weight and the motion in the wrist-joint was fairly good.

R. O. RITTER.

Teuji, H.: Atrophy of the Muscles in Affections of the Joints (Über die Muskelatrophie bei Gelenkaffektionen). *Nippon-geka-Gakkai-Zasshi*, 1913, xiv, 172.

By *Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.*

The author caused inflammation of the knee-joints in dogs by injecting into them 0.2 ccm. of oil of turpentine and at the same time flexing the knee-joints to about 120 degrees and fixing them in the flexed position with a nail. After from eight to nineteen days the animals were killed and the muscles of the lower extremities were carefully weighed. All of them were found to be more or less atrophied. Between the atrophy of the extensors and the flexors, and the mono- and poly-articular muscles there was no gradual difference. Inflammations outside of the joint capsule and artificial immobilization of the joint may cause muscle atrophy to the same degree as affections within the joints. This atrophy of the muscle is believed to be a simple atrophy from activity without numerical increase in nuclei.

OYAMA.

FRACTURES AND DISLOCATIONS

Hawley, G. W.: Spontaneous Fracture in Carcinoma of the Bones. *Am. J. Orth. Surg.*, 1913, xi, No. 1.

By *Surg., Gynec. & Obst.*

The author reports three cases with seven fractures. In one case both femurs were fractured, in another, a single fracture of the humerus occurred, and in the third, fractures of the femur, radius, clavicle, and humerus took place over a period of three years. The disease of the bones in all the cases was secondary to carcinoma of the breast, and in two of the cases a radical breast operation had been done without local recurrence. Post-mortem examination was performed in one case, with extensive dissection of the skeleton. Carcinoma metastasis was found in the bones.

The bones are a favorite site for metastatic deposit in cancer of breast, thyroid, and prostate. It is recorded as occurring in 72 per cent of prostatic, 34 per cent of thyroid, and 14 per cent of mammary carcinomata. It is a peculiar growth, in that it commonly invades many bones, rarely alters their gross appearance, and is not usually detected unless it produces enlargement, is discovered by röntgenography, or is complicated by fracture. It not infrequently occurs early in the primary disease and appears eight to ten years after apparent operative cures of mammary cases. Contrary to general belief prompt and complete repair follows, as a rule, in these fractures. In the seven fractures reported, union resulted in all. Röntgenographs and photographs of carcinomatous bones, with bibliography, accompany the paper.

Rixford, E.: The Mechanics of Production of Certain Fractures: Greenstick Fractures, Buckling Fractures, Flexion and Torsion Fractures. *J. Am. M. Ass.*, 1913, lxi, 916.
By Surg., Gynec. & Obst.

The etiology of fractures may be presented as an application of the principles of practical mechanics. The bones of the skeleton are subjected to stresses which may resolve themselves into tensile or compressive stresses. These usually occur in combination, as in flexion, torsion and shearing stress, but here must be added shock or vibration. In gunshot fractures the impact is of almost completely determining significance. Impact at low velocity tends to displacement, and resolves itself into bending or torsion, or both. Impact at high velocity in addition tends to produce local bruising or crushing; hence, it is a penetrating power. The simplest form of stress in the production of fracture is bending, illustrated in mechanics by the stress in a beam, supported at its two ends, and carrying a load between the supports. Compressive stress is developed on the side of the application of the load, while tensile stress is developed on the opposite side of the beam. The shafts of normal adult bones invariably break by yielding to tensile stress rather than to compressive, and in transverse fractures, practically without exception break from simple strain, as in fractures caused by direct violence and in those caused by indirect or transmitted violence. The line of fracture is seldom exactly transverse. Often a loose fragment is completely broken off. This always occurs on the side of the concavity.

Scudder defines a greenstick fracture as a partial break across the bone with bending at the seat of fracture. The author's personal observation is to the effect that true greenstick fracture according to the above definition is the exception among the incomplete fractures in children, which are for the most part buckling fractures, hence fractures by compression. Transverse fracture with lateral displacement does not occur in children, if enough force is used. For the common form of incomplete fracture of the middle shaft of a child's bone, simply

bending the bones back into place is sufficient; but in the rare greenstick fracture, reduction is almost impossible without completing the fracture, for the reason that reduction requires a certain amount of stretching on the side opposite the concavity. Therefore it is proper practice to complete the fracture in such cases by exaggerating the angular deformity present. In the regions in which complete fractures in children are most common, for example in the radius, the bone, like a wrought-iron beam, breaks by buckling on the side of the compressive stress.

Complete fracture, if taken early, may be reduced by simply bending back into position; a buckling fracture cannot. However, a buckling fracture should not be completed by increasing the flexion deformity as is proper in the true greenstick fracture. By forcing the bone back into position (slight overcorrection is desirable) the bone breaks, beginning at the buckled portion. Shearing stress gives few examples of fracture, yet in the cleavage fracture of the neck of the astragalus, the sharp anterior edge of the articular surface of the tibia fairly cuts the head off of the astragalus. Torsion fractures were formerly classed with oblique fractures. The long bones are frequently subjected to severe axial torsion, particularly the bones of the lower extremity. A right-handed twist always produces a right-handed spiral fracture and a left-handed twist always a left-handed spiral. This spiral may encircle the bone two or more times. Loose fragments are common in such fractures. The author illustrates his demonstration by several photographs and X-ray pictures. He completes his article with a plea to students for the presentation of fractures from the standpoint of mechanics, illustrated by experimental work in the breaking of plaster, clay, wood, old rubber, and dead human bone.

FREDERICK G. DYAS.

Fischer, E.: A Portative Extension Apparatus for the Treatment of Dislocated Fractures of the Upper Extremities and the Patella (Über meine portative Extensionsapparate zur Behandlung dislocirter Frakturen der oberen Extremität und der Patella). *Tr. Internat. Cong. Med.*, Lond., 1913, Aug.
By Surg., Gynec. & Obst.

The apparatus described above is to correct all dislocations of the fragments of the humerus and forearm. The strap of contra-extension is fixed to the opposite thigh. The extremity is nowhere fixed to the apparatus, and is held only by the extension plaster. The extension power can be very well regulated.

The good results obtained with the apparatus were demonstrated through röntgenograms.

Skinner, E. H.: The Mathematical Calculation of Prognosis in Fracture at the Ankle and Wrist. *Tr. Internat. Cong. Med.*, Lond., 1913, Aug.
By Surg., Gynec. & Obst.

The author believes that the prognosis in fractures at the ankle and wrist can be mathematically cal-

culated from the radiograph. The main idea was that in the reduction of fractures less attention need be paid to the anatomical alignment of the fragments if the joint surfaces are in correct relation and the lines of weight-bearing force functionally satisfactory. Nature is wonderfully tolerant of fragments if she can maintain the functional joint surfaces. Skinner showed how the lines of weight-bearing force may be charted on the negative, and the proper adaptation, for instance, of the astragalus to the tibia, which was the secret of the correction of ankle fracture, noted. If the antero-posterior X-ray negative shows the astragalus centered under the tibia, the prognosis as to functional result is more favorable than with any anatomical alignment of fragments. With regard to the wrist, the author's axiom was that the entire styloid process of the lower end of the radius is constantly distal to a line which touches the tip of the ulnar styloid and is at a right angle to the longitudinal axis of the radius. It is the tilting back of the lower end of the radius that interferes with the function at the wrist, and this can be overcome only by the full extension of the fragment and the consequent normal position of the articulating surface to its normal weight-bearing position. The proper reduction of the lower end of the fractured radius provides the correct charting which portends a good functional result.

Haudek, M.: Central Dislocation of the Femur (Luxation femoris centralis). *Wien. klin. Wchnschr.*, 1913, xxvi, 1243.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Isolated luxations of the femoral head are rare, but Worner had collected 41 cases from the literature in 1908. The mechanism is as follows: In falls upon the trochanter or the feet, either the pelvis or the femur may act as the fixed portion. If it is the pelvis, then the femoral head is driven against the floor of the acetabular cavity. If the femur is fixed, then the acetabulum is forcibly hooded over the head of the femur. In the majority of such accidents fracture of the acetabulum does not occur, and other forms of injury in this part of the body are much more common. If the luxation is to take place, the force must be directed toward the center of the acetabulum and in line with the long axis of the neck and head of the femur, i. e., when the leg is midway between adduction and abduction. The consistency of the bone is of importance. In elderly people fractures of the neck of the femur are more common on account of the brittleness of the bone, while in younger patients acetabular fractures are not so rare. Primary central dislocation of the femur can therefore occur when there is a fracture of the acetabulum, and the femoral head passes through the fractured area. But more commonly the dislocation is secondary, and is brought about by more prolonged pressure or traction upon the head of the femur after the acetabulum has been fractured. The diagnostic features are: A slight

shortening of the leg on outward rotation, 1-3 cm. elevation of the trochanter, and the presence of a tumor above Poupert's ligament. The treatment in recent cases consists in reduction by flexion and forcible adduction with a heavy pad on the inner side of the femur as a fulcrum. This is followed by extension for at least six weeks. If it is impossible to bring about reduction, then extension alone must be tried. The prognosis as to function is not good, and even as to life the outlook is poor, as 70 per cent died of the associated injuries. The X-ray shows that in most cases a new acetabulum forms about the dislocated head.

BECKER.

Murphy, J. B.: Fixation of the Knee with Backward Luxation of the Tibia. *Surg. Clin. J. B. Murphy*, 1913, ii, No. 4. By Surg., Gynec. & Obst.

A man of 37 years was admitted on account of limited motion of left knee. On Sept. 14, 1911, he was struck on the knee by a falling mass of earth weighing about 150 pounds. It broke to pieces on striking the leg, and inflicted a small superficial skin cut at the time. He had slight pain in the leg at the time but the knee was not swollen. He was in bed four or five days, but at no time did he have any pain. September 19th he got up on crutches. After two or three days the knee began to swell and became very painful. He did not have a chill preceding the swelling and no elevation of temperature. He returned to bed because he could not walk on account of the pain. The leg was put in a cast, for two months, from the ankle to the thigh. He had some pain then, but it was not severe. Then a cast was applied including the whole body, and it was left on for three months. When removed, February, 1912, the knee was almost stiff and there was slight pain on movement and walking. September, 1912, the knee was manipulated under anesthesia. After that, he noticed that the lower leg was luxated backward. Motion was not improved. Since that time he has had pain only on continued use, and then only slight.

On account of the uncertain diagnosis, Murphy varied his usual incision. A transverse one was made just below the patella, and the patella split by double-L incision as in lengthening tendons. The condition proved to be tuberculosis, hence a typical resection was done, not an arthroplasty. The patella and tuberculous capsule were removed and the ends of femur and tibia squared off with Hey's saw. A slot was then made in the end of each bone, and a phosphor-bronze plate inserted to correct subluxation of tibia and to favor bony union. After removing the patella, the ends of the patellar ligament and quadriceps tendon were joined with chromic gut to aid in immobilizing the joint.

One of the most important points in these cases of tuberculosis is immobilization. The phosphor-bronze plate prevents motion and immobilizes the joint better than anything else can. Skin sutured with horsehair; no drain. Straight cast placed on for three to six weeks.

The patient left ten weeks after operation. The skin wound healed promptly and a firm bony union resulted between the tibia and femur. He was advised to wear a full-length leather stocking for six months.

SURGERY OF THE BONES, JOINTS, ETC.

Freeman, L.: *The External Bone Clamp Versus the Internal Bone Plate in the Operative Treatment of Fractures.* *J. Am. M. Ass.*, 1913, lxi, 930.
By Surg., Gynec. & Obst.

The ideal method of fixation would consist in the use of some material that would be absorbed rapidly and leave no foreign body to cause delayed union or late infection. No substance now in use answers all these requirements. At present, the plate and the clamp are applied most often and in ununited fractures the autogenous bone graft is rapidly gaining ground. The internal bone plate and the external clamp are very similar, the only difference being that in one the part which unites them is outside of the skin and in the other it is beneath it. The external clamps have several screws long enough to project well beyond the skin when they are inserted into the bone. The external clamp is better than the internal plate because:—

1. It can be more easily applied with less manipulation and denudation of the bone; holes may be drilled and screws inserted with the fragments in almost any position.

2. Nothing comes in contact with the line of fracture and the screws may be placed as far away from the break as desired. Martin says that as a rule the presence of a plate, instead of stimulating osteogenesis between the broken bone-ends, retards it.

3. Usually the external clamp will immobilize the fragments more firmly than the internal plate. The screws may be long, because they will be removed later, and the clamp may be heavy, as it lies outside of the tissues. When a clamp is properly inserted, say in a fracture of the tibia or the femur, the limb may be picked up by the foot and thrown about in any direction without fear of disturbing the fracture. If a plate be employed, this can seldom be done without danger of bending or breaking it, or pulling the screws from the bone. The principal advantage of the external clamp is that it may be easily removed at any time without the use of a general or even a local anæsthetic.

Internal plates are constantly being taken out because of their failure to hold the fragments or because of infection. Among the disadvantages urged against the external clamp are its size and weight. This objection is easily disposed of, however, because the large and heavy portion, which insures security and strength, lies outside where it is productive of neither inconvenience nor danger. The screws alone penetrate the tissues, and they are often of no greater diameter than those of the internal plate. The most plausible objection

to the external clamp is the great danger of primary or secondary infection. If the operation is clean, primary infection will not occur with either a clamp or a plate. If the operation is not clean, neither will prevent infection. In favor of the clamp, however, it may be said that its great advantage lies in the fact that it may be removed without a second operation. If secondary infection occurs with the clamp, it appears late, is trivial in amount, and is confined strictly to the screw-holes. Infection does not spread easily with either screws or sutures, because a granulating channel is soon formed, which affords a protecting wall. In order to prove this point, experiments were carried out by Fowler, who inserted screws through the soft parts of the bones. He was able to demonstrate that the holes became lined with granulations in the course of three or four days. Secondary infection may be prevented largely by dressings and the application of alcohol or tincture of iodine.

In conclusion the author states that both plates and clamps are of value in the hands of skilled surgeons. The external clamp is especially indicated in connection with the shafts of long bones. Clamps should be employed in combined fractures in preference to plates where there is any danger that infection will result from the injury.

FREDERICK G. DYAS.

Groves, E. W. H.: *Experimental Observations on the Repair of Fractures and the Influence upon It of Various Operative Procedures.* *Med. Press & Circ.*, 1913, xcvi, 316.
By Surg., Gynec. & Obst.

In a series of experiments with animals, principally upon cats, it was found that mobility at the site of fracture is not essential to repair, and that mobility and faulty fixation lead to excess of callus.

In cases where intramedullary pegs were used, the callous condition was found intermediate between that of absolute fixation and that of free mobility. In cases where callus was stimulated by chemicals, excess of osseous tissue resulted. The degree of mobility determines whether there will be a false joint or a firm union. In these experiments, ossification was never begun under the periosteum, but the bulk of callus was first laid down as cartilage.

As to the use of screws and plates in the fixation of bones, experience proves that within a few weeks, the majority of such plates become loose, the screws falling out into the soft tissues. This usually brings about serous effusion, which breaks through the skin, becomes infected, causing a sinus, and necessitates the removal of the foreign bodies. In order that a screw or pin should take a firm hold of the bone and not soon give way it must go through the whole thickness of the bone and be held by means of a nut or turned-over end; such fixation will remain permanently. The idea that plates and screws become loose and are extruded simply because they are foreign is not borne out by these experiments.

Methods of fracture fixation which do not involve direct exposure of the seat of injury give the most ideal results; namely, rapid union with minimum callus formation. In order to determine the rôle of the periosteum in the repair of fractures of the long bones, a thin sheet of metal was placed beneath it. In a tibia examined twenty days after this procedure, the formation of callus was well advanced beneath the plate and was extending from the ends of the plate under the periosteum. In studying the process of repair in comminuted fractures, it was found that if the fragments were removed, the periosteum restored to its original position, and the ends of the main portions of the bone kept apart at their original distance, repair occurred hardly at all, or only very slowly. In a tibia 42 days after such treatment, it was found that the union had been effected by fibrous tissue only, and the little bone tissue growing from this started out from the bone-ends and was not laid down from the periosteum. The results of these experiments are in complete accord with Macewen's observations, which show that the periosteum itself lays down no new bone, but that the new formation occurs from the cut surface of the bone, either from the main shaft or, more rapidly, from the separate fragments. The periosteum carries the vascular supply. When this is absent, the callus receives nourishment only from the two ends of the area involved and not from the side. Repair, therefore, is slower and weaker than when the periosteum is in its normal position.

The conclusions drawn are summarized as follows:

1. Screws which merely bite into the side of the bone will rapidly loosen by a bone process of absorption if they are subjected to much tension.
2. All fractured ends are conducive to good repair.
3. The only way in which fractures can be firmly united by plates is by the use of pins, screws, and nuts which perforate the whole thickness of the shaft.
4. Great mobility of the ends of a fractured bone is likely to produce a false joint, especially in the case of a single bone such as the femur.
5. Marked mobility of the ends of a fractured bone causes a great excess of callus.
6. Metallic magnesium is absorbed in a bone and causes great callus excess.
7. Indirect methods of fracture fixation give the most ideal results and these are the only methods possible when dealing with combined and comminuted cases.
8. The periosteum has no power to form callus or new bone.
9. The periosteum is of great value in serving as the chief vascular supply to the callus and in limiting its extent.
10. Active callus and bone formation always occurs from the broken surface of the bone and a very small fragment acts as a center for new bone growth.

FREDERICK G. DYAS.

Hesse, F. A.: The Therapy of Congenital Defects of the Fibula, with a Contribution to the Technique of Operations on the Epiphysis (Zur Therapie des kongenitalen Fibuladefektes, zugleich ein Beitrag zur Kenntnis der Epiphysenoperation). *Deutsche Ztschr. f. Chir.*, 1913, cxvii, 478. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author describes in detail the case of a nine-year-old boy with a congenital defect of the fibula. He believes that for the treatment of cases of this kind no definite rule can be laid down. The results of operative procedures, it seems, are not as good as those of conservative treatment, for the degenerated and atrophied bones have but little tendency to heal after an operation. With conservative treatment there are hardly any failures. An early treatment increases the growth energy of the bones. If operative treatment is used, the time that it should be begun varies for different cases. The main danger of operative treatment is that the epiphyseal line may be injured.

The author experimented to determine whether longitudinal splitting of the epiphyseal line according to the method of Bardenheuer interferes with growth. On account of the anatomical distribution of the vessels in young bones transverse operations always arrest development even though they do not hit the epiphyseal line directly. In most cases the experiments showed that strictly longitudinal splitting from the joint to the diaphysis if not too extensive neither retards nor incites growth, but that if the splitting varies even slightly from the longitudinal direction a decrease in growth results. Therefore, Bardenheuer's longitudinal splitting is very difficult and, if the slightest mistake occurs resulting in the breaking off of a portion of the epiphysis, it may be dangerous.

From these facts the author concludes that treatment should be conservative. In his own case, a splint-encasing apparatus with a pes equinus position and massage were employed with good results. An extensive bibliography is appended. WEICHERT.

Von Tappeiner, F. H.: Transplantability of Epiphyseal and Joint Cartilage (Transplantationsfähigkeit des Epiphysenknorpels und des Gelenknorpels). *Ztschr. f. d. ges. exp. Med.*, 1913, I, 491. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

In transplantation, bone regularly undergoes necrotization. Joint cartilage, on the other hand, survives both in autoplasmic and homoplasmic transplantations. The regeneration of the necrotic portion takes place by cellular substitution, i. e., there is immigration of the preserved cartilage cells into the dead portion. The intermediary cartilage remains partly viable and retains the power of proliferating and growing in length, but the parts which do not undergo necrosis are not sufficient to guarantee an even approximately normal longitudinal growth. Contrary to the above-mentioned view of the author is the experience of Rehn, who obtained much more favorable results in homo-

plastic transplantation of the intermediary cartilage. The epiphyseal cartilage remained almost entirely viable and the transplanted bone was not retarded in its growth.

In order to throw more light on these questions Tappeiner made his experiments on dogs, whereas rats or rabbits had been used previously. The distal half of the second metatarsal bone was used as a transplant. Healing without reaction occurred in autoplasmic as well as homoplasmic transplantations. In autotransplantation the intermediary cartilage retains its vitality and does not lose its power of growth. In homotransplantation the intermediary cartilage transplant is not useful clinically. In all of the experiments there was shortening of the metatarsal bone. Tappeiner therefore confirms the opinions of earlier authors (Helferich, Enderlen, Axhausen), and explains the divergent results of Rehn by the fact that he used only very small pieces of bone, which are more rapidly permeated by the nutritive fluid of the mother substance. Many other questions are discussed in this work, and exact protocols with histologic reproductions are appended. VALENTIN.

Forbes, A. M.: The Surgical Treatment of Monarticular Rheumatoid Arthritis of the Hip. *N. Y. M. J.*, 1913, xcvi, 614.

By Surg., Gynec. & Obst.

The author, in discussing the various treatments and describing an operation for excision of the femoral head, states that this was one of the earliest modern treatments, but was discarded because it was claimed that the operation was too shocking, and that the neck afterwards slipped out from the acetabulum and gave a condition similar to congenital dislocation of the hip. He says that neither objection is valid if the proper course is pursued. The author cites Baer's cases and describes an instrument, an evulsor, which was used. Baer's operation is explained as follows:

He uses Brackett's incision from the anterior superior spine to the superior extremity of the great trochanter, then down the external surface of the femur three inches. From the junction of these two incisions a third incision two inches long is made in a posterior direction; the flaps are dissected away from the deep fascia and the trochanter with attached muscles is detached with a chisel. The soft parts are elevated by blunt dissection from all sides of the neck of the femur to the acetabulum. His evulsors are then inserted between the soft parts and the periosteum until the capsule is perforated on all sides. The evulsors are also carried around the internal surface of the acetabulum, detaching the capsule in all parts from the acetabular rim.

By means of manipulation with the evulsor as a lever, the head is carried out of the acetabulum. An aneurism needle attached to a Gigli saw is inserted and carried around the anatomical neck of the femur and the anatomical head removed. All

osteophytes are removed from the rim of the acetabulum. All hæmorrhage being controlled, the neck is manipulated into the acetabulum, and the trochanter is replaced in its normal position and held by means of a wire nail. The deep muscles are sutured as tightly as possible around the bone in order to maintain the neck in the position once held by the head. The limb is put up in plaster in marked abduction and is held in this position for at least six weeks.

JAMES O. WALLACE.

Stöffel, A., and Stöffel, E.: New Points in Regard to Tendon Transplantation (Neue Gesichtspunkte auf dem Gebiete der Sehnenüberpflanzung). *Deutsche med. Wchnschr.*, 1913, xxxix, 1680.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Nikoladonis' technique for the tendon transplantation takes too little account of the morphology and physiology of the muscle. In choosing a muscle for transplantation it is not enough to select one that lies as near as possible to the injured one, and whose loss will not be noticeable, but the transplanted muscle should correspond as nearly as possible to the one whose place it is to take in structure, origin, and course. For instance, the flexor hallucis longus should not be used to replace the extensor longus digitorum pedis or tibialis anticus by drawing it through the interosseous membrane because severe disturbances of the function of the muscle are caused by pulling it through the narrow aperture and deflecting it from its normal course. This deflection can only be partially obviated by detaching it from its origin and this itself is detrimental. Instead the extensor hallucis longus or peroneus longus should be chosen, since their course is similar to that of the muscle to be replaced, so that only a slight displacement of the end of the tendon is necessary. The flexor hallucis longus has been carried over the surface of the tibia instead of pulling it through between the bones, but in order to avoid the useless spiral twist of the belly of the muscle, four-fifths of its origin had to be severed. As this procedure rendered powerful action impossible, the flexor hallucis longus should not be used to replace the tibialis anticus. Instead, the extensor hallucis longus should be chosen. From further examples given in the original article and more especially from their experimental work, and about 50 operations, the authors find that it is necessary to keep the muscle in its physiological state of tension. Normally the muscle is under only slight tension, only reacts a little when its tendon is cut. The slightest stretching lessens its contractility. In transplantation therefore its normal length should be maintained.

For example, in substituting for the quadriceps the sartorius, biceps, semimembranosus or semitendinosus, they should not be attached altogether to the patella but at different heights along the quadriceps, corresponding to their varying lengths. It is absolutely wrong to try to correct an abnormal position of the injured part by increased tension on the transplanted muscle. The position should be

corrected by some suitable procedure before the transplantation, and only the normal contractility of the muscle made use of. In correcting deformities of the feet, the trouble cannot be overcome by the formation of an artificial ligament by transplanting the tendon of the tibialis anticus and fastening it as far toward the distal end of the periosteum of the tibia as possible. For the same reason, stretched muscles should not be shortened by operation, since they are thereby put in the same state of tension that caused the stretching. The muscle, if left alone, will soon adapt itself to the correct position of the limb, especially if strong contraction by electricity is begun at once. For this purpose the authors attached to the nerve a thin metal wire which projected out of the wound and through the plaster cast and was attached several times a day to the cathode. It was left in position from ten to twelve days. In conclusion, they call attention to the importance of testing the contractility of the transplanted muscle by means of the electric current.

SIEVERS.

ORTHOPEDICS IN GENERAL

Berg, P.: Madelung's Deformity of the Wrist-Joint, Carpus Valgus (Die Madelungsche Deformität des Handgelenkes, Carpus valgus). *Arch. f. orthop., Mechanotherap. u. Unfallchir.*, 1913, xii, 325.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

In this paper Berg, after consideration of the literature, discusses Madelung's deformity of the wrist-joint. Three new cases are reported, one of which the author was able to keep under observation from its beginning to its complete development. The cases are made to conform to Madelung's classification, and only those are included which arise spontaneously during the period of development without history of trauma or infection. The condition comes on gradually during a period of from one to two years. The author considers late rickets as the etiological factor in these cases. The point of origin is the epiphyseal line. All deformities of the radius occurring with the condition, whether at the middle or lower third of the bone, are to be looked upon as the results of muscular contractures. In conclusion, the suggestion is made to apply the term carpus valgus to all deformities of this type at the wrist regardless of the etiology, and to designate the classical Madelung's disease as carpus valgus.

REINHARDT.

Böhm, M.: Congenital Developmental Defects in the Skeleton of the Trunk (Die angeborenen Entwicklungsfehler des Rumpfskeletts). *Tr. Internat. Cong. Med.*, Lond., 1913, Aug.

By Surg., Gynec. & Obst.

The author distinguishes five types of congenital developmental defects in the skeleton of the trunk: (1) curvature caused mechanically in utero; (2) actual malformations, some of which are the result of secondary formations, others, of defects, and still others, of fusions; (3) variations (cervical ribs,

numerous variations etc.); (4) primary congenital asymmetry of the thorax and abdomen; and (5) disturbances of the direction of growth upon a phylogenic basis (pigeon and infundibular breast).

Whitbeck, B. H.: The Importance of the Treatment of Weak Feet in Childhood. *Med. Rev. Res.*, 1913, xix, 539.

By Surg., Gynec. & Obst.

The proportion of weak feet among children is steadily on the increase, as various statistics show. The economic value involved has never been considered in figures, though it is thought the results would be astounding if worked out upon accurate lines.

The seriousness of flatfoot is fully appreciated by the military authorities, and the examinations are very stringent on that point. Statistics are given, showing the discharges and rejections from the United States Army and Navy, as well as from those of the English and Japanese armies, because of flatfoot.

The report of the Municipal Civil Service Commission of New York shows that in the last civil service examination for patrolmen 204 candidates out of 3,746 examined were rejected for flatfoot and 136 out of 2,820 candidates for the position of fireman were rejected for the same cause.

Of 2,059 boys at the De Witt Clinton High School, New York City, 667, or 32 per cent, had weak feet, and 260, or 12 per cent, had broken arches. In the elementary schools the percentage of flatfoot is said to be much higher, though no exact figures are obtainable.

In the Orthopedic Department of the Hospital for Ruptured and Crippled, of New York, 8,020 patients were treated in one year. Of this number, 2,102 suffered from flatfoot; 244 were under 14 years of age, and 529 were between 14 and 21 years of age.

The causes enumerated as producing weak feet in children are: 1. Congenital conditions of general weakness or abnormal development. 2. Overweight of the body, bringing undue strain upon the feet. 3. Prolonged illness or general malnutrition, when the muscular power is greatly below normal. 4. Improper attitudes assumed by children either as the result of the other mentioned causes or through faulty education or badly constructed shoes.

The author's conclusions are:

1. Weak foot is the most disabling and widespread of all postural deformities, affecting all classes of society and occupations.

2. A decidedly large number of cases exist from early childhood.

3. As a result of various causes, the feet assume faulty attitudes which, though not necessarily causing disability in childhood, are nevertheless powerful factors for harm in adult life.

4. The proper treatment of this condition in childhood is essential to the prevention of disability in adult life, when interference with occupation is a serious matter.

CHARLES M. JACOBS.

Sweeney, M. T.: Gymnastics for Crippled Children. *Am. J. Orth. Surg.*, 1913, xi, No. 1.

By Surg., Gynec. & Obst.

The author gives, in general as well as in detail, the methods and exercises used in cases of different types of deformity. She believes that the chief aim in the treatment of crippled children should be to adjust the child physically so that its vital resistance will be increased and its activities normalized. Also, that individual exercises are better than those given in class form, and that these special exercises under ideal conditions should be part of the daily routine of the school. Each child should have daily at least fifteen minutes concentrated effort directed toward its special need, and carried out under the close supervision of a properly trained person. Besides localizing work on the special conditions present, efforts should be made to improve in general the chest capacity and thereby the circulation. While the main efforts may be directed toward active work, there are a certain number that cannot do active work. For these children there should be systematic, supervised rest periods, which are of the greatest importance.

The following conditions are dealt with in detail, and careful gymnastic prescriptions are given for each type of case:

Paralysis, obstetrical, spastic, infantile; tubercular joints, old and active; congenital dislocations of the hip; congenital abnormalities, malformations; rachitic deformities, knock-knees, bowlegs, scoliosis;

traumatic amputations; arthritic joints; kyphoscoliosis.

Gymnastics in these cases will not cure. They will reduce the liability to disease by improving general tone of body, but they cannot obliterate the conditions, which are generally of a fixed type. Often, as in the tubercular affections, to improve the general condition is the direct way to eliminate the process. Therefore gymnastics may be largely influential in bringing about a cure.

In cases of spastic paralysis, co-ordinative work should be combined with precision exercises. They should not undertake exercises that bring into contraction muscles already contracted.

In cases of infantile paralysis, the work is concentrated on the parts paralyzed, as is also true in cases of obstetrical paralysis.

Patients whose joints show active tubercular processes are given supervised periods of rest. The old cases are given only such exercises as do not bring about motions in the affected region. The other deformities which are too complex to be properly covered by an abstract are taken up in detail. The apparatus needed is simple. A table, trapeze, benches, pulley-weight, dumb-bells and a few wands are enough. The results are excellent, and at the end of three years the comparison of weights and measurements of these children shows marked increases, besides producing, on the whole, a much healthier lot of children.

JAMES WARREN SEVER.

SURGERY OF THE SPINAL COLUMN AND CORD

Elsberg, C. A.: Some Surgical Features of Injuries of the Spine, with Special Reference to Spinal Fracture. *Ann. Surg.*, Phila., lviii, 296.

By Surg., Gynec. & Obst.

The author states that in his experience, careful X-ray study shows, in a large proportion of cases of apparently trifling spinal injury, definite fissures or fractures of the spinous or transverse processes, and he suggests the possibility of slight traumatism playing an important rôle in the etiology of spinal diseases. The rupture of spinal ligaments may also result from apparently trifling injuries. That such rupture can lead to protracted and serious symptoms is shown by a report of two cases operated upon.

In fractures of the spine, Elsberg believes that immediate laminectomy is indicated in all of those cases which show "incomplete" cord symptoms. In the cases which have not been seen until late after the injury, laminectomy is also indicated, but in such cases the results are never so good as when the operation is performed before the cord has been permanently damaged by the hæmorrhage and œdema which immediately follow the injury. In those cases in which there is a complete transverse injury, operation does harm rather than good.

BARNEY BROOKS.

Schanz, A.: The Treatment of Scoliosis (Die Behandlung der Skoliose). *Tr. Internat. Cong., Med.*, Lond., 1913, Aug.

By Surg., Gynec. & Obst.

Congenital scoliosis is a deformity of the spinal column that occurs in post-foetal life. The characteristic symptom-complex is the formation of a curve on one side of the spinal column with a compensatory curve on the other. The individual vertebræ become wedge or diagonal shaped. The long column shows signs of torsion. The scoliosis is the result of a disturbance of the static weight-bearing ability of the spinal column, which is characterized by an excess of the load imposed over the ability of the spine to hold it.

In the young, scoliosis may be benign or malignant. The benign form heals or comes to a standstill without, with, and in spite of, treatment. The malignant scoliosis gets worse to a degree which may cause severe disfigurement. It interferes with the ability to work and even shortens the life. The causes of the benign form of scoliosis are usually physiological, including disturbances of the strength of the vertebræ in early development, chlorosis, poor nourishment, etc. Malignant scoliosis is caused by a disturbance of the bones of the spine, in most cases the so-called late rickets.

In the treatment of scoliosis two indications must be fulfilled: (1) the indication of the cause; (2) the indication of the finished deformity. The causes of benign scoliosis are so manifold that it is impossible to lay down a plan of treatment for all cases. After the deformity has occurred the indication is to restore the carrying power of the spinal column. For the purpose of taking the weight off of the spine the orthopedic apparatus is of value; its chief danger consists in the fact that it may cause atrophy of the muscles resulting from inactivity, which further lessens the strength of the spinal column. Attention should be given to the improvement of the general health and to local treatment by massage, electricity, etc. Gymnastics should be used with care. For the correction of the present deformities mechanical traction and pressure are aids. They may be used in the form of manual redressments. Gymnastics are of no use in correcting deformities. A plaster cast is a great help, but it has the disadvantage that the strength of the spinal column suffers during its use. Any correction cure carries with it the danger that although the primary result may be good the deformity may recur later and the final end result may be much worse than the original deformity. Late rachitis is not a genuine rachitis. It is a disease of which the true nature is not yet known and in this fact lies the weakness of the entire therapy of scoliosis.

JANSEN has for some years made use of a plaster-bed in a side position in which the principal curve—usually the dorsal curve—is made to rest upon a convex surface and to deflect to the other side.

The plaster-bed in side position should complete the treatment by plaster-jackets and gymnastics, but not replace these methods. It has shown itself very useful for children. The little children are made to lie in it by day and night for some months, and the older ones, either only during the night or during the night and part of the day. F. G. DYAS.

Ollerenshaw, R.: Sacrococcygeal Tumors. *Ann. Surg., Phila.*, 1913, lviii, 384.

By Surg., Gynec. & Obst.

Ollerenshaw classifies congenital tumors peculiar to the sacrococcygeal region and taking their origin from the transitory organs of the caudal end of the embryo into four chief groups: (1) Caudal appendages; (2) dermoid cysts; (3) mixed tumors (teratomata); (4) foetal inclusions.

He reports an interesting case of the third variety, wherein this growth was about the size of a child's head and, prior to birth, was thought by the mother to be a second foetal head.

The tumor was situated in the sacrococcygeal region, apparently separating the gluteal muscles of the two sides, displacing the anus forward, without interfering with micturition or defecation; it was covered by tense skin, and consisted of multilocular cysts and a solid portion. When the child was several weeks old the growth was successfully removed by excision.

D. L. DESPARD.

Law, A. A.: Ventral Tumors of the Sacrum. *Surg., Gynec. & Obst.*, 1913, xvii, 340.

By Surg., Gynec. & Obst.

Embryological study of the caudal end of the spinal axis explains these growths. Early in embryonic life the entoderm forms the caudal intestine, canal dorsalis, and chorda dorsalis; the mesoderm, the connective tissue, muscles, vertebrae, and blood-vessels; and the ectoderm, the primitive streak, the medullary tube, and its vestiges. The central canal of the spinal cord and the primitive alimentary canal are in communication through the so-called neurenteric canal which is later obliterated.

When the proctodeum invaginates to form part of the cloacal chamber it meets the gut above the neurenteric canal. For a time a part of the gut remains behind the anus and is called the post-anal gut. This also becomes obliterated later.

These misplaced tissue anlagen are susceptible to local disturbances of development, and, according to Middledorf, to tumor formation. There are many theories as to the cause of these tumors. It is generally accepted that the simpler dermoids may arise from monogerminal tissue implantation. The more complex teratomas and mixed tumors, however, generally show evidences of all three foetal layers. Many observers believe the tumors are due to proliferation of the remnants of the neurenteric canal, the medullary canal, and the hind gut, in association with ectodermal and mesodermal inclusions. Many find it difficult to explain by the monogerminal theory some of the complex teratoids, where an entire limb, an eye, a bronchus, rudiments of vertebrae, intestine, or liver may be demonstrated. These tumors have given birth to the bigerminal theory, according to which such a tumor represents an incomplete monstrosity or twin, a parasite engrafted upon its autosite or host; in fact, a suppressed foetus.

The sacrococcygeal tumors vary greatly, both individually and morphologically, and show great diversity of tissue. They have been designated "histological potpourri." A preponderance of one tissue may indicate from which foetal remnant the tumor originated. Practically all of these tumors are definitely encapsulated and arise usually from the pelvic connective tissue. They are on the border line of malignancy. Murphy calls attention to the fact that they often contain mammary and testicular tissue which is liable to malignant change, and we have reports of the rare chorion epitheliomas in teratoids; therefore their removal is indicated.

Reports of these tumors complicating pregnancy are very rare and in the literature the writer finds no case like the one which prompted his paper.

A girl of sixteen, pregnant at full term, had been in active labor for 24 hours. A pelvic tumor practically filled the true pelvis and mechanically prevented delivery. Accordingly, a caesarean section was performed. The uterus was delivered through the abdominal wound before it was opened. An

assistant by grasping the blood-vessels on either side prevented hæmorrhage where the uterus was incised.

The child and placenta were removed. Then, as the tumor was found to be intimately attached to the rectum, vagina, and sacrum, and as it could not be removed from above, a panhysterectomy was performed. The mother made a normal recovery and the child lived.

Five weeks later a Mayo-Kraske exposure was made, removing the sacrum and coccyx below the second foramen of the former. The main tumor and a smaller attached growth were shelled out without difficulty or hæmorrhage. The mother again made a normal recovery.

A detailed report of the tumor was made by H. R. Roberston, associate professor of pathology and bacteriology in the University of Minnesota. He concludes that nests of embryonic cells growing in syncytial-like masses suggest malignancy in their manner of growth and appearance. Areas of hæmorrhage, necrosis and calcareous degeneration demonstrated the atypical character of the tissue, its rapid development and imperfect blood supply. The smaller tumor suggested a neuroma in its general characteristics.

That the tumor sprang from some misplaced remnants of the terminal portions of the neural tube seems a logical conclusion. Portions of it developed abnormal powers of proliferation and showed signs of malignant change. Other portions in an imperfect manner reproduced the adult type of nerve tissue.

Murphy, J. B.: Post-Sacral Dermoid. *Surg. Clin. J. B. Murphy*, 1913, ii, No. 4.

By Surg., Gynec. & Obst.

The patient, a male of 20, stated that two years before he had a small, elevated, very sore mass in the skin to the left of the anus. It was very painful for two weeks, when it ruptured and discharged a foul-smelling pus. A sinus formed, and afterwards it continued to discharge. He was operated on unsuccessfully in October, 1911. The sinus was still discharging. In February, 1913, he had another abscess over the buttocks and two more to the left of the anus. These abscesses also ruptured, discharging a bloody pus. There was still a considerable discharge, and the skin around the anus was excoriated.

In April, a longitudinal incision was made, directly over the location of the dermoid, passing to one side of the fistula, going through the skin, superficial and deep fasciæ, into the sac. The sac was lined by a granulation tissue. Care was taken to make sure that there was no other track leading off from it.

The sac removed, the wound was closed first with silkworm-gut sutures, to immobilize the tissues. This is one of the most unpleasant places in the anatomy to get a healing, because of the motion of the thigh. A rubber tissue drain was placed from the upper angle of the wound down and out through

the lower angle. The usual alcohol dressing (plus 1 per cent phenol) was applied.

The important factor in such cases is the differential diagnosis. Pilonidal cysts and post-sacral involutions of a remnant of the neurenteric canal are commonly treated by opening and drainage, by curettement, by cauterization, by iodine injections, etc., all of which are ineffectual. These sacs are lined with epithelial cells and only a complete dissection of the lining produces a cure. If any portion remains, or if diverticula are overlooked, recurrence of the suppuration is inevitable. Post-proctæal cysts or dermoids are also of embryonic origin, but occur in front of the sacrum and behind the rectum, and they require the same treatment.

Healing progressed better than was expected and the patient left in four weeks, with the wound completely healed.

Murphy, J. B.: Laminectomy for Aneurismal Sarcoma. *Surg. Clin. J. B. Murphy*, 1913, ii, No. 4.
By Surg., Gynec. & Obst.

The patient, a man of 36, showed almost complete transverse paralysis, occurring suddenly with a history of pain. The skiagram showed a tumor $1\frac{1}{2}$ inches in diameter, clean cut, on the right side of the spinal column. The pain extended down into his limbs. There was a severe pressure backward against the arches of the vertebræ from something situated anterior to the spinal column — that is, it had come through from in front.

An osteoma usually takes its origin in the bodies of the vertebræ. Osteoma in this location is not common, and it rarely ever compresses the cord. When it does do so, the compression occurs very slowly, not producing the symptoms noted in this case before many months or even years. Then acute infections must be considered, such as acute osteomyelitis with a granuloma or an abscess pressing back toward the spine. If this mass had been an abscess it would have shown in the skiagram as an area of rarefaction and not solidification, as the case showed. Echinococcus cysts and actinomycosis also would show a rarefaction. A bone lesion compact enough to give a shadow as dense as this one is found only occasionally in the metaphysis of the knee, that is, the slow ossifying processes that take place in the shaft of the long bones as the result of infections that are active over a period of years. Of such this man had no history. There was no history of trauma, no lues, nothing that would cause an aneurism in that portion of the aorta as was indicated in the skiagram. Occasionally, an aneurism in this location causes an absorption of bone and finally compresses the cord. An aneurismal sarcoma could develop as rapidly as this condition did and compress the cord, but such a lesion should give a rarefaction and not a solidification. An aneurismal sarcoma should give a skiagraphic picture similar to that of an aneurism.

At operation, the growth proved to be a sarcoma protruding between the seventh and eighth dorsal

vertebræ; it was probably a little below the center point of the elevation. There was profuse flowing of blood, as from an artery; this was controlled by pressure. None of the laminæ or spinous processes were removed.

A microscopic section made of a spoonful of tissue removed at operation confirmed the clinical diagnosis

of aneurismal sarcoma. Primary wound healing followed, with no enlargement of the tumor backward. A skiagram, taken 13 weeks after operation, showed no material change in the size of the tumor. The patient has been getting Coley serum and X-ray treatment without avail and at the time of the report fatal termination was close at hand.

SURGERY OF THE NERVOUS SYSTEM

Leriche, R., and Dufourt, P.: Four Cases of Stretching of the Solar Plexus for the Gastric Crises of Tabes (Quatre observations d'élongation du plexus solaire pour crises gastriques du tabes). *Lyon chir.*, 1913, x, 256. By *Journal de Chirurgie*.

Leriche has studied the surgical treatment of the gastric crises of tabes for several years, and tried, on four patients, the stretching of the solar plexus, proposed a long time ago by Jaboulay. The operation is simple and without danger and the four patients recovered uneventfully, but at the end of a

few weeks the crises reappeared as frequently and as violently as before. These negative results confirm those recently published by Delbet and Mocquot.

A brief résumé of the four cases as described by Leriche shows that in addition to the stretching of the solar plexus, Förster's section of the posterior roots and Franke's operation of detaching various intercostal nerves were performed, with scarcely any success. In brief, this surgery for the gastric crises of tabes is extremely disappointing.

LENORMANT.

MISCELLANEOUS

CLINICAL ENTITIES — TUMORS, ULCERS, ABSCESSSES, ETC.

Carrel, A.: Contribution to the Study of the Mechanism of the Growth of Connective Tissue. *J. Exp. Med.*, 1913, xviii, 287.

By Surg., Gynec. & Obst.

Carrel has already shown that connective tissue can be preserved for an indefinite time in vitro, in a state of active life. In the present study he has attempted to ascertain some of the relations which exist between the tissues and their medium.

The experiments were made with strains of connective tissue derived from embryonic or adult chickens. It was found that when the tissue is cultivated for a certain time in a given medium which has been repeatedly changed, a definite relation arises between the rate of growth and the composition of the medium. The rate can be accelerated or retarded by the addition to the medium of activating or retarding substances. The rate of proliferation of connective tissue after cultivation for sixteen months equaled or exceeded that of fresh connective tissue taken from an eight-day-old embryo. It appears, that time has no effect on the tissues isolated from the organism and preserved by means of the technique described. J. F. CHURCHILL.

Friedman, J. C., and Hamburger, W. W.: Value of Edestin and Peptone in Diagnosis of Cancer of the Stomach. *Arch. Internal Med.*, 1913, xii, No. 3.

By Surg., Gynec. & Obst.

Neubauer and Fischer, in 1909, proposed the use of glycytryptophan as a reagent for the estimation

of peptolytic activity and applied it to the diagnosis of carcinoma of the stomach. The test consisted in mixing glycytryptophan with a portion of the filtered gastric juice obtained after the usual test breakfast, incubating for 24 hours, and then testing with bromin vapor for the rose-violet color of free tryptophan. Their conclusions were as follows: (1) There exists in carcinomatous stomach contents a ferment which, contrary to pepsin, will split glycytryptophan. (2) This ferment is destroyed by an acidity of .36 per cent HCl. (3) The presence of this ferment may be of diagnostic value. Their report was accepted with widely divergent criticism. Friedman and Hamburger have used the peptone quantitative method and have added the use of edestin as a means of controlling the most frequent source of error — proteolytic cleavage.

One of the most frequent criticisms of the biochemical tests for cancer of the stomach is the fact that the gastric contents of normal individuals, as well as of non-cancerous patients, under certain conditions, split glycytryptophan and other polypeptides. Although several authors have defined the sources of error in these tests and have suggested various modifications to control them, no one, so far as they are aware, has made use of a second substrat to control and rule out the cleavage due to non-cancerous ferments. The authors discuss, first, the probable sources of error; second, submit a method for the control of the most frequent error — proteolytic cleavage; third, report a series of cases in which this method has been used. Abderhalden believed that the ferment derived from cancer cells belonged to the general group of ereptases, ferments

capable of splitting polypeptids and peptones, but incapable of attacking native protein. No specificity has been noted on the part of this cancer-derived ferment so far as the cleavage of polypeptids and peptone is concerned. Therefore, it is to be emphasized that these tests based on peptolytic cleavage are specific only in so far as the ereptase of any given gastric contents can be shown to be derived from the cancer tissue itself. To do so, it is essential to rule out ereptase from non-cancerous sources, as follows:

(a) The ereptase (erepsin) of regurgitated duodenal contents (succus entericus).

(b) Serum ereptase from hæmorrhage into the stomach and from transudation of ereptase-containing fluids into the stomach.

(c) Tissue ereptase from breaking down of cells of the gastric mucosa.

(d) Ereptase of swallowed saliva.

In addition, protease, capable of peptolytic cleavage, as well as proteolytic cleavage, must be identified and controlled, if present:

(a) Trypsin of regurgitated pancreatic juice.

(b) Proteases of bacteria and leukocytes — mostly from swallowed saliva.

From a general survey of these several sources of error, it was considered, for reasons to be discussed later, that the second group, the proteases of pancreatic juice (trypsin) and saliva (leukocytes and bacteria), were most frequently active. The authors believed, therefore, that if this proteolytic cleavage could be controlled, they would materially increase the reliability of the methods in question.

Küttner and Pulvermacher, Lyle and Kober, Öhrl and Schittenhelm and others contended subsequently that the bile test was inadequate to exclude trypsin. On the basis of their own work, Friedman and Hamburger agree with those holding that a negative bile test does not of itself exclude trypsin. Warfield and Koehler first called attention to the fact that saliva under certain conditions is capable of hydrolyzing glycytryptophan and other di- and tripeptides, believing such action to be due to a hitherto undescribed salivary ferment. The authors state that the method about to be described for the control of pancreatic trypsin serves equally well for salivary leukoprotease, thereby dismissing, for purposes of clinical diagnosis, the problem of the origin of the proteolysis. The use of the vegetable globulin edestin was suggested for this work by Jöbling as a true native protein, subject to cleavage by proteolytic ferments only, thereby serving as a substrat for differentiating cleavage due to peptolytic enzymes. The authors describe in detail the method: (a) Control and estimation of proteolytic cleavage (proteolysis); and (b) estimation of peptolytic cleavage (peptolysis).

Only those cases are included in which the diagnosis was controlled by the operative or autopsy findings, or in which the clinical picture was so definite as practically to exclude errors in its interpretation.

This report comprises the results obtained from 37 cases, divided as follows:

(a) Cancer of the stomach.....	10
(b) Chronic ulcer of the stomach.....	5
(c) Chronic inflammation of g.b. and pancreas ..	6
(d) Old gastro-enterostomy cases.....	4
(e) Control cases.....	12

Total..... 37

The authors present complete tables with their analysis, and summarize as follows:

1. Edestin is a valuable aid in controlling the proteolytic cleavage of stomach contents.

2. The proteolytic cleavage of stomach contents is due in most instances to regurgitated trypsin, although leukocytes and bacteria probably play some rôle.

3. By the use of edestin with peptone it is possible to materially reduce the errors in non-cancerous and normal cases due to trypsin, leukocytes and bacteria.

4. The edestin-peptone method possesses distinct value in the diagnosis of cancer of the stomach and is of considerable service in the differential diagnosis between benign and malignant acidity.

5. High peptolysis with low proteolysis speaks for carcinoma; high peptolysis with high proteolysis against carcinoma.

6. The edestin-peptone method, as in other laboratory tests, is of practical value only when taken in conjunction with the usual clinical and laboratory findings.

BERNARD FRANCIS McGRATH.

Goetze, O.: Multiple Primary Carcinomata (Bemerkungen über Multiplizität primärer Carcinome in Anlehnung an einen Fall von dreifachem Carcinom). *Ztschr. f. Krebsforsch.*, 1913, xiii, 281.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The autopsy of a 75-year-old man showed a stomach carcinoma, and adenomatous polyp of the intestine, four carcinomata of the descending colon and sigmoid flexure, a carcinoma of the rectum, a scirrhus carcinoma of the right lobe of the prostate, and cancerous metastases in the liver. Histological examination showed that all these except the nodes in the liver, which were metastases from the intestinal carcinomata, were primary tumors.

KONJETZNY.

Henderson, Y.: The Pathology of Shock. *Tr. Internat. Cong. Med.*, Lond., 1913, Aug.

By Surg., Gynec. & Obst.

Shock, in the broad sense in which the term is often used, is not a single, clear-cut disorder, but a group of conditions which differ one from another fundamentally. However, owing to the fact that these various conditions resemble one another superficially, they are generally confused. The first problem is to define and distinguish each one.

The term shock originally meant concussion, an invisible vibration through all the tissues and organs which inhibited their functional activity. Contu-

sions involved "local shock." Nowadays it is accepted as a matter of course that, apart from hæmorrhage and infection, the effects of an injury such as the crushing of a foot are transmitted, not by an "invisible vibration" through all tissues, but through the nervous system. To state this is not to give a theory of shock, but merely to admit the basis from which any theory must start.

The following are some of the modes of sudden death referred to as "shock"; all are easily distinguished from "shock" as a state of depression: (1) Electric shock. Electric currents of high potential may throw the heart into fibrillation or paralyze the respiratory center. (2) Anaphylactic shock. Death from an injection of a foreign protein in a sensitized subject results from constriction of the bronchi, stiffening of the myocardium, or abolition of vascular tonus. (3) Shock from grief or fear. Simultaneous stimulation of all cardiac nerves may produce cardiac fibrillation and immediate death. (4) Chloroform shock. Mental excitement and physical suffering increase the secretion of adrenalin. Adrenalin plus light chloroform anaesthesia produces cardiac fibrillation. Levy has proved that many fatalities have occurred in this way.

The following are some of the states of depression termed shock: For the gynecologist shock is *par excellence* the result of hæmorrhage. For some surgeons it is the state of depression following intense suffering even without loss of blood. For other surgeons it is a general depression following prolonged operations without considerable loss of blood or suffering. For some physiologists it is something akin to one or another of the foregoing. For other physiologists it is the condition induced by high section of the spinal cord. Among the foregoing there are probably at least three more or less distinct conditions.

According to the theory now prevalent, shock is a state of vasomotor failure, essentially a prolonged syncope. This idea originated in the celebrated "Klopfversuch" of Goltz. On slapping a frog on the abdomen it was noted that the heart-beat became feeble and the abdominal blood vessels relaxed. From this has come the explanation, undoubtedly correct, that syncope is reflex inhibition. Most modern investigators, particularly Crile, have assumed a similar explanation for shock. However, as a matter of fact, such an explanation does not explain the failure of respiration, the loss of tonus, the reflexes in muscles, atonicity of the intestine, etc., which also occur in shock, and explains the circulatory disturbance only partially. Crile found (and the experience of the writer verifies the fact) that in experiments on shock 90 per cent of the subjects die from failure of respiration while the circulation is still in fair condition.

Clinical cases and animal experiments carried out by the writer show that intense suffering causes excessive respiration and may be followed by failure of respiration from acapnia. Experiments were quoted in which the atonicity of the intestines and

the tympanites following exposure and handling were overcome by means of CO₂. A form of shock identical in many respects with that seen clinically may be induced by acapnia. However, it is not claimed that this is by any means the only condition that leads to clinical shock.

The fundamental error in most modern discussions of shock lies in confusing it with the vasomotor and other functional depressions seen in the purely experimental "spinal shock" induced by high section of the cord. In reality, as the writer's experiments show, the failure of the circulation in surgical shock usually is essentially like that after extensive hæmorrhage, and unlike a prolonged syncope or vasomotor failure. Present knowledge indicates that shock as seen clinically depends upon a decreased blood volume. Solution of the pathological and surgical problems of shock requires first the solution of the as yet ill defined physiological problem, "What are the conditions which normally regulate the distribution of fluid between the blood and the tissues?"

Broca, A.: Surgery of Childhood (Chirurgie infantile). Paris: G. Steinheil, 1913.

By Journal de Chirurgie.

This book presents the results of twenty years' practice of surgery, first at the old Trousseau Hospital and later at the Hospital for Sick Children, which indicates an extremely abundant material. Throughout his career, Broca had in view the double purpose of being a surgeon and an educator. He is fitted for his work as a teacher, which was always of supreme interest to him, by the clearness of his mind, the precision of his language, his great learning, and rare general culture.

All these qualities show in the book, in which he has brought together all that he has learned, in his practice, for the benefit of students and surgeons. The whole field of children's surgery is presented. Diagnosis and treatment hold first place, but they would be mere empty formulas if not based on a knowledge of pathogenesis and pathological anatomy, and on laboratory study which is of so much importance in medicine to-day. The author has made use of all these branches of pathology in his treatment, so that the book is a complete treatise on the surgical pathology of childhood.

Diseases of the bones and joints, of course, take first rank, as they are the most characteristic conditions in this special pathology. They take up almost two-thirds of the volume. The rest is devoted to a study of the diseases of the different organic systems and regions. All the surgical diseases peculiar to childhood and those which, though not peculiar to that period, present special features in childhood, are described.

The illustrations are of prime importance in a book on surgery, which is an objective science, and in a book designed for teaching; and the author has given his attention to this feature and in a characteristic personal way. There are no plates, no repro-

ductions of photographs or radiographs, nothing but diagrammatic sketches, which the author says may be as exact and much clearer than a photograph, and as they are so much cheaper to reproduce they may be used to any extent. The abundance of the illustrations in this work proves this to be true, and they have the merit of being derived almost entirely from the author's own practice.

A detailed analysis of a work of this sort is not possible. It is sufficient to say that it is the most complete and original treatise we have on the surgery of childhood.

LENORMANT.

SERA, VACCINES, AND FERMENTS

Shattuck, G. C., and Whittemore, W. S.: Gonococcus Vaccines and Glycerine Extracts of the Gonococcus in the Diagnosis of Gonorrhœal Infections. *Boston M. & S. J.*, 1913, clxix, 373.
By Surg., Gynec. & Obst.

The authors discuss the question of the specificity of the gonococcus vaccines and glycerine extracts in detail. They have carried out a series of experiments on a limited number of patients, the results of which are tabulated. The first vaccine used was prepared from nine strains of bacteria which had been grown on artificial media for several months; the second, from fresh cultures. Both vaccines acted differently when given intradermically. In all cases the first vaccine reacted positively after it was a week old. Forty-six cases were tested by this method. The local reactions appeared in all gonorrhœal, and in nearly all non-gonorrhœal, cases. In eight gonorrhœal and two non-gonorrhœal cases there were signs suggesting a general reaction. A focal reaction was observed in one case only, the diagnosis in this instance being gonorrhœal arthritis. The results are attributed to autolyses.

It is stated that when a vaccine has undergone autolysis to an unknown degree, when changes in it may still be taking place, and when perhaps the peculiar proteins of the original organism may have been destroyed or modified, the results of the diagnostic tests and of treatment by such a vaccine may well prove unreliable; and if a specific reaction should occur, it may be masked by the effects of irritating or non-specific toxic products of disintegration of the bacteria.

These suggestions indicate that more knowledge is needed in regard to the changes that take place in gonococcus vaccine, and raise the hope that more satisfactory results may follow improved methods of preparing the vaccine.

The authors tested the same vaccine by the von Pirquet method, but did not obtain satisfactory results. Glycerine extracts and a control were then prepared and inoculations made by the von Pirquet method. Forty-eight cases were tested. The results obtained were somewhat better, but not satisfactory. The conclusions drawn were as follows:

1. The concentrated vaccine showed no superiority for diagnostic tests.

2. In gonorrhœal and in control cases it produced a local lesion like that of a chemical irritant. Autolysis may have been a factor in producing the supposedly irritating properties of this vaccine; the changes in the vaccine may have prevented it from producing a specific reaction, and the unsatisfactory therapeutic effects of gonococcus vaccine may, perhaps, be traceable to autolysis.

3. Glycerine extracts of the gonococcus inoculated by the method of von Pirquet caused, in a few cases, the formation of peculiar papules which may have represented a specific reaction. Most of the cases showed no definite reaction.

EDWARD L. CORNELL.

Komarowsky, M.: Treatment of Gonorrhœal Affections with Gonococcus Vaccine (Zur Frage der Behandlung gonorrhöischer Erkrankungen mit Gonokokkenvaccine). *Therap. Rundschau*, 1913, vi, 437. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author obtained good results from vaccine treatment in a case of vulvovaginitis, in gonorrhœa of the epididymis, joints, prostate and Cowper's glands. In chronic gonorrhœa the treatment was utterly ineffective. The gonococci never disappeared after pure vaccine therapy, but local treatment was also necessary in order to get rid of them entirely.

VON SCHILLING.

BLOOD AND LYMPH VESSELS

Tscherniachowski, E.: Suturing the Vessels in the Treatment of Aneurism (Zur von Frage der Anwendung der Gefässnaht bei der Behandlung der Aneurismen). *Deutsche Ztschr. f. Chir.*, 1913, cxxiii, 1.
By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

A description and criticism of the different operations for aneurism show that all the old methods completely cut off circulation in the region and cause gangrene in 12.2 per cent of the cases, or even if the collateral circulation is free enough to prevent gangrene, there are later disturbances in nutrition such as atrophy and ischæmia. Frisch, in the examination of ten cases after one to eight years, found only four that were entirely well. Hunter's ligation of the chief tributary vessels above the aneurism gives the worst results, since it cuts off the greater part of the collateral circulation, the preservation of which is so important in such operations. The statistics for gangrene vary from 10.2 to 19.3 per cent.

The result of the older Antyllus' operation, which consists in tamponing the sac of the aneurism, is better, as is also the record of the Matas obliterating operation, in which the tributary vessels are closed by sutures from within the aneurism and the sac itself is obliterated by buried sutures. This operation is improved upon, however, by his other two operations, the "restorative" and the "reconstructive." The first of these consists in the suture of the lumen of the vessel from the opened aneurism; in the second, the sac walls are sutured over a catheter,

which is removed after the lumen of the vessel is restored. Both operations are intended to keep the lumen of vessels patent and reduce the danger of necrosis to a minimum, but the presence of the diseased vessel wall tends to bring about recurrences. The "lateral suture," which has recently been much used, is practically the same only that the aneurismal sac is extirpated. Both operations are suited for arterio-venous aneurisms and especially for sacculated aneurisms with a small slit-like opening.

The author has found 31 cases of lateral suture in the literature, 11 in arterial and 20 in arterio-venous aneurism. In two cases there was gangrene, but from causes for which the operation could not be blamed—arterio-sclerosis and gaseous phlegmon. Death was not due directly to the operation in any case and there were no recurrences. The ideal operation is Lexer's method of circular suture of the vessel with resection of the diseased portion. Of the three methods of uniting the vessel, Murphy's, Payr's and Carrel-Stich's, the author prefers the latter. He has used it twenty-five times on animals, with success in 72 per cent of the cases, and he also used it successfully on a human subject in the case of a man with arterio-venous aneurism caused by a shot in the thigh, which case is reported in detail in the original article.

Tscherniachowski prefers the continuous circular suture and uses a forceps of his own with a controllable screw arrangement. The danger of recurrence is slight, as Sofoterow has found that the pressure in the sutured vessels is 180–190 mm. The success of the suture depends on the technique, which is not at all simple and the most careful aseptics. In 13 cases from the literature, 6 of arterio-venous and 7 of arterial aneurism, there was no case of gangrene. Death occurred in one case, and patency of the lumen in 53.8 per cent of the cases. Autoplastic transplantation of veins can be done only where there are large defects to be supplied, but its value has not yet been decided upon. Heteroplastic transplantation is never successful. If an attempt at vessel suture would endanger the life of the patient, or it is not possible for technical reasons, the best procedure is Matas' obliterating operation. The older methods of ligating the vessel and extirpating the aneurism are to be used only in smaller vessels, the ligation of which does not injure the nutrition of the part.

SIEVERS.

Nasaroff, W. M.: Injuries of the Thoracic Duct in Operations on the Left Supraclavicular Region (Über Verletzungen des Ductus thoracicus bei Operationen in der Regio supraclavicularis sinistra). *Arch. d. chir. Klin., Prof. W. A. Oppel, Med. Akad. z., St. Petersburg*, 1913, iv, 125.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author deals with secondary injuries in operations at the base of the neck. In the case of a woman, thirty-three years of age, who was operated for a metastasis in the glands following amputation of the breast, the thoracic duct was injured in clean-

ing out the left supraclavicular fossa. This injury was not noticed at first, but was later evidenced by the flow of chyle. A milky fluid could be seen flowing from a small opening at the apex of the somewhat dilated, healing wound. The opening was cauterized, the wound tamponed, and after three weeks the fistula closed and the wound healed. The author further tabulates sixty-two cases reported in the literature, making a total of sixty-three cases. The injury occurred during the extirpation of tuberculous cervical glands, twenty-four times; of carcinomatous glands, twenty times; of sarcomata and lymphomata, eleven times; of malignant strumas, three times; of aneurysms of the left subclavian artery, once; of leukæmic glands, once; of hæmorrhagic cyst of the neck, once; and in operations for traumatic injuries of the neck, twice. Seventy per cent, therefore, occurred during gland extirpations. In general, prognosis is good and healing finally occurs after prolonged chyloorrhœa. Tamponade and ligation must be considered in the treatment. The latter leads to a cure the more rapidly. Suture to, or transplantation into, a vein after complete division of the duct must be mentioned. Deanesli (Lancet, 1903) reported a successful cure. SCHAAK.

SURGICAL THERAPEUTICS

Hahl, C.: The Influence of Pituitrin upon Blood Pressure after Hæmorrhage (Der Einfluss des Pituitrins auf den Blutdruck nach Blutungen). *Finska läk.-sällsk. Handl., Helsingfors*, 1913, lv, 218.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

On the basis of 23 observed cases, the author comes to the conclusion that an intramuscular injection of 0.5 to 1.0 ccm. of hypophysial extract cannot increase the blood pressure of a woman who has lost an average of 1,200 ccm. during a confinement. A rapid increase, however, occurs if, in addition, normal saline infusion—here in the form of enemas—replaces the decreased fluid in the vascular system.

BJÖRKENHEIM.

Caspary: 1. Physico-Chemical Treatment of Cancer. 2. Vaccine and Serum Treatment of Cancer (1. Die Anwendung der physikalisch-chemischen Behandlung. 2. Vaccinations- und Serumtherapie der Geschwülste). *München. med. Wchnschr.*, 1913, lx, 1907.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

At the International Conference for Cancer Research in Brussels in 1913, Caspary of Berlin discussed the use of physico-chemical means in the treatment of cancer. He claims that they may either cause an increase in the autolytic ferments of the body or limit the exuberant growth of the tumor, and that the first is a local effect, the latter a general one. The latter, he says, is to be preferred, and its use is justified even in operable tumors; but there is the danger, however, that the tumor mass may be rendered fluid and the organism injured by absorption of it, unless, as in the case of cancer of

the uterus, it can be discharged externally. He further states that since metastases cannot be affected by radiation, other internal remedies must be used for their destruction, and that with chemical means alone no decisive cures have been obtained, so they should always be used in conjunction with radium treatment.

In the discussion that followed, Bayet of Brussels recommended radium treatment for external tumors except on the tongue, the penis, the parotid gland and the abdomen. Freund of Vienna discussed the difference in serum of normal blood and that of cancer patients. The first destroys cancer cells, the latter does not, and it even contains an albumin body that protects the cancer and furthers its excessive growth. It arises from catabolic processes in the intestine of cancer patients. Immunization, however, cannot be attained by its use, at least in horses. Wermer of Heidelberg did not believe physical therapy was of great importance: he recommended radium treatment only for superficial epithelioma; for sarcoma he preferred röntgen rays. The rest of the participants in the discussion were almost all convinced of the value of treatment by radium, but an exact judgment as to its value cannot be pronounced.

Odier, Genf and Coley of New York had used injections of streptococci in metastases, the latter with good results. Matapan of Brussels regarded the injection of streptococcus toxin as a valuable adjuvant to other methods of treatment. Witzel of Düsseldorf believed injections of toxins and chemical means should be used in conjunction with operative treatment. Pinkus of Berlin treated three patients with an autogenous vaccine. One of the patients is still living but has a recurrence. Blumenthal of Berlin and Daels of Ghent had good results from vaccination with serum from the same kind of tumor from other patients, and yet better with serum from the patient's own tumor. To avoid transmission of bacteria he kept the material standing in the incubator for from two to three days.

VOSWINCKEL.

ELECTROLOGY

Aagaard, V.: A Method for Removing the Discoloration from Stained Röntgenograms.
Am. Quart. Röntgenol., 1913, v, 20.

By Surg., Gynec. & Obst.

This is a valuable point in technique, for the method does not soften nor reduce the density of the negative. The formula consists of two solutions:

Solution A: One ounce of saturated solution of potassium permanganate in eight ounces of water:
Solution B: One ounce of potassium metabisulphate in eight ounces of water.

After thoroughly washing the negative, and while it is still moist, immerse the plate in Solution A for four or five minutes, agitating the solution constantly by rocking the tray. Then remove the plate and rinse it well. On removing the plate and rinsing it,

it will be found stained the characteristic color of permanganate, but after being left in Solution B from two to three minutes and again rinsed, it will be found perfectly clear. It is very important that the surface of the plate after being removed from Solution A should be rubbed with a tuft of cotton dipped in water before it is placed in Solution B, to be sure that all the chemicals are removed from the film; otherwise some stain may be left.

G. E. PFAHLER.

Pirie, A. H.: A Sliding Diaphragm for Improving the Quality of Skiagraphs. *Am. Quart. Röntgenol.*, 1913, v, 18.

By Surg., Gynec. & Obst.

The importance of diaphragming in röntgenography is well established. Pirie's moving diaphragm enables the röntgenologist to cover large areas and still retain the effect of a small diaphragm.

The principle consists in moving a rectangular diaphragm over the top of another rectangular diaphragm, each being placed at right angles to the other.

He does not describe the details of his construction nor of the motive power, but in the article he gives a diagram illustrating the principle.

G. E. PFAHLER.

Cabot, S.: An Analysis of the Various Forms of Energy Supply for the Generation of X-Rays.
Am. Quart. Röntgenol., 1913, v, 1.

By Surg., Gynec. & Obst.

Cabot explains the advantages in röntgenography, röntgenoscopy, and röntgentherapy of using his apparatus, which is capable of giving predetermined and unfluctuating voltage for the energy supply to Röntgen tubes. His paper consists mainly of a restatement of current theories in a more intelligible way, together with the presentation of certain original theories of his own.

During the past three years he has made quantitative measurements of electrical energy supplied by various forms of X-ray apparatus and has analyzed the qualities and quantities of the rays produced. The results of this work seem to offer an explanation of the reason why different forms of X-ray apparatus give different results with the same tube and why some are specially suitable for a given purpose.

The measure of quality used in Cabot's experiments was the Benoist penetrometer. Besides the usual forms of X-ray generating apparatus, such as coils and transformers, the author has constructed an apparatus which has the ability to maintain an unfluctuating voltage on the tube terminals.

During the past two years quantitative measurements have been made at the Massachusetts General Hospital by Dodd. The results of these measurements were as follows:

1. Confirmation of Thompson's law: "Each unit of thickness penetrated absorbs a fixed percentage of the energy transmitted to it, and this percentage is dependent upon the penetration of the ray and the nature of the absorbing medium."

2. The thickness of dissipating medium-penetrated rays, which absorbed a fixed percentage of energy of X-light, was found to be directly proportional to the voltage maintained on the tube terminals.

3. If tungsten or platinum targets are used, the voltage maintained on the tube terminals may be read from the Benoist gauge. Thus, 3 Benoist was produced by 30,000 volts; 5 Benoist by 50,000, etc.

4. The absorption of energy at the various degrees of penetration in common use as it penetrated tissue was measured and a set of curves prepared showing graphically the distribution of energy absorption.

It is hoped that by means of these curves more accurate knowledge will be obtained of the dosage reaching a diseased part located below the surface of the skin in therapeutic work as well as in röntgenography and röntgenoscopy. The curves were plotted on data obtained by watching areas on photographic plates which were equally darkened by exposure. This method has a possible error of 20 per cent. It is proposed to check them by an electrometer.

When a tube is actuated by a transformer, it emits rays of all degrees of penetration. The relative proportion in which rays of the different penetrations are mixed is determined by the resistance characteristics of the tube, which change from day to day. Current is flowing through the tube about two-thirds of the total time, and the maximum value is about two to three times that indicated by the millimeter. In cases in which a tube is energized by an induction coil, we have also a mixture of penetrations supplying energy to the tubes in pulses of very great intensity. These pulses are separated from each other by relatively long intervals of time. The maximum current in the tube is ten to fifty times that shown on the millimeter. For this reason, the same tube banks up a much greater voltage than it does on a transformer. The resultant penetration produced with a given number of milliamperes will therefore always be greater with a coil than with a transformer.

If a tube is energized by a machine giving unfluctuating voltages, the registered current is the maximum current amplitude.

The results of the analytical work were as follows:

Röntgenography. The apparatus should be able to maintain voltages from 30,000 to 80,000 as desired and be able to dissipate 10 kw. of energy in the tube. It should have a quick acting kilovoltmeter and milliammeter.

Table of tube voltages: 30-35 kv. for hand and chest röntgenographs on thin subjects; 35-40 kv. for general work on small parts giving great contrast; 40-45 kv. for bone work in parts less than two inches thick, for chest work in 100-pound patients, and for general tissue detail using intensifying screens; 45-50 kv. for bone work of extremities and chests of 150-pound patients; 50-60 kv. for kidney and bismuth work in light subjects, also for extremities; 60-70 kv. same as above in heavier

patients; 70-80 kv. for hips, frontal sinuses, and bismuth work; plates show considerable loss of contrast.

The most important factor in getting the best results is to know accurately the penetration during the exposure. With Cabot's apparatus, this can be determined by meter, which is much simpler than by any other known method. Cabot's apparatus is in the nature of a direct current rotary converter having a variable ratio of transformation, transforming 220 volts, direct or alternating current, to high potential direct current, having a fluctuation of $1\frac{1}{2}$ per cent. This high potential can be adjusted at will from 30 to 100 kv., and is capable of supplying energy to the tube up to a rate of 15 kw.

Röntgenoscopy. Cabot's apparatus is so flexible that it is readily possible to use the same tube for röntgenoscopy and at any instant excite the tube sufficiently for röntgenography.

Röntgentherapy. This branch of Röntgen work has been very much held back by lack of scientific means of knowing, recording, and reproducing the exact dosage, especially in deep-seated lesions. Ability to maintain non-fluctuating voltage promises to do away with this uncertainty. Already it has become possible to state the Saboreaud pastile doses in figures, i. e., 3,400 milliamperes seconds at 10", penetration Benoist 4.

To get as good results in deep therapy as we have in superficial, it is only necessary for the tube-maker to design a tube of higher puncturing voltage and proper resistance characteristics, and for the electrical engineer to supply a proper source of energy to actuate this tube. Cabot's apparatus gives promise of fulfilling the latter condition.

A. H. HOLDING.

Opitz, E.: Supplements to the X-Ray Treatment of Malignant Tumors (Randbemerkungen über Unterstützung und Ersatz der Strahlenbehandlung bösartiger Geschwülste). *Strahlentherapie*, 1913, iii, 251. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

That better results are obtained by combining several forms of treatment, neither one of which may be sufficient in itself, is Opitz's belief. So, in the treatment of inoperable carcinomata, he gave potassium iodide internally and powdered calomel over the ulcerating edges, which had been scraped out with a sharp curette. This combined treatment prevented hæmorrhage and suppuration for a long time. Internal administration of cholin caused temporary cessation of growth. Experiments with combined cholin and X-ray treatment have not yet been finished. It has been observed that lymph glands make carcinomatous cells inactive and that cancerous foci are surrounded by a zone of lymphocytes. It would, therefore, seem desirable to create an artificial local or general lymphocytosis. If a lack of salts in the diet favors the proliferation of epithelial cells, the addition of silicates, calcium, or other salts would deserve consideration in the treatment of carcinoma. The author has given up at-

tempts at serum treatment because twice he had serious results from anaphylactic shock.

FRANGENHEIM.

Kienböck, R.: Radiotherapy of Malignant Diseases. *Tr. Internat. Cong. Med.*, Lond., 1913, Aug. By Surg., Gynec. & Obst.

The ideal method of treating tumors is to destroy the pathological cells without producing injurious effects upon the neighboring healthy tissues and without causing harm to the organism. This end may be attained by the use of the röntgen ray and other similar rays, because of the exceeding sensitiveness of pathological cells (selective action).

Röntgen and radium rays can remove malignant tumors, even very large ones, provided these tumors are very radio-sensitive. Countless cases of permanent cure have been recorded. If a tumor disappears quickly under the influence of irradiation, it is not likely to recur.

When surgical or radiotherapeutic methods offer the same chance of cure in a given case, the latter should be preferred on humanitarian and cosmetic grounds. The prospect of permanent cure following operation for carcinoma is not any too great, even when the tumor is considered quite operable; Czerny says three-fourths of the operated cases recur.

The greatest progress in the technique of röntgenotherapy has been made through the work of Perthes and Dessauer and their followers. It is especially important to filter the röntgen rays through thick aluminum in the treatment of deep-seated tumors, particularly when the skin is beginning to show sensitiveness. Reicher and Lenz make a great advance by producing anæmia of the skin with adrenalin, making it much less sensitive to the rays.

Lately it has been frequently stated that harm may result from röntgenotherapy of malignant tumors unless a proper technique is followed. It has been believed that small röntgen doses stimulate the growth of the tumor. In reality, however, with a proper technique only a very small proportion of cases of malignant tumor are unfavorably influenced and in such cases more rapid growth of the tumor is due to the fact that in the presence of an acute inflammatory infiltration of the tissues in the neighborhood of the tumor cells the rays stimulate the inflamed base upon which the tumor grows into still greater inflammation.

The author protests vigorously against the belief that in malignant tumors small doses are uniformly or primarily "irritation doses." If small doses really can irritate, it would at best be only restricted doses on circumscribed areas, and practically without significance.

JAMES T. CASE.

Mackee, G. M.: Therapeutic Technique. *Tr. Am. Röntg. Ray Soc.*, Boston, 1913, Oct.

By Surg., Gynec. & Obst.

The author discusses his subject under two headings; first, the estimation of the quality, and

second, the determination of the quantity, of ray employed.

To estimate the quality of ray he uses the milliamperemeter, the Bauer qualimeter and the Benoist radio-chronometer. He actuates the tube with one milliamperemeter of current and selects one which, with this current, will give a qualimeter reading of 8 to 9 and a radio-chronometric reading of 8 to 11 and maintain this vacuum for a considerable time. He advises the use of a "hard" ray for all lesions.

To determine the quantity of ray he prefers the Holzknicht radiometer. He does not dose his tube for quantity, but measures the dosage of each treatment with the pastille.

He discusses the effects of age, heat, light, and moisture upon the pastille and concludes that although it does not answer all theoretical requirements it is sufficiently accurate for all practical purposes, provided the user knows the sources of error, has had experience, and is careful.

To administer a dose he places the pastille upon the skin, rather than half-way between the anode and the skin. His reasons are fully set forth in his article. As a basis of dosage he employs the dose table of H units as formulated by Holzknicht. He reasons thus: If 4 Holzknicht units of a Benoist 6 ray (H4 B6) will produce an erythema of the skin of the face of an adult, it will require a smaller dose of a B3 or a larger dose of a B9 to produce the same effect. Although Mackee is in favor of the massed dose, he advises the inexperienced to employ a repeated small dose until a reliable technique is required.

In discussing the question of idiosyncrasy the author states that he has neither seen nor heard of a true case. He does not, however, deny its possible existence. Hypersusceptibility does exist and is an important factor.

Some portions of the body are more sensitive than others. The face, for example, is most sensitive and the scalp most resistant. Children are more susceptible than aged persons, and females and blonds more susceptible than males and brunettes. Such diseases as mycosis fungoides, eczema, psoriasis and applications of chemical irritants such as tar, mercury, sulphur, iodine, and particularly chrysorobin cause a hypersensitiveness of the skin. Hence the dose will depend upon the part of the body that is to be rayed, the age and complexion of the patient, the disease, the quality of the ray, and the effect desired.

The author considers also the question of color blindness in connection with the reading of the pastille. Those afflicted with color blindness who can detect slight differences of unit can use the pastille, but those who cannot make such comparisons cannot do so. Every radiotherapist should have his eyes examined for such a defect.

In conclusion the author advises the use of the customary indirect methods of qualitative and quantitative measurements such as the "working

distance" of the anode and the milliamperage of the current in the tube, the direct method being added at first as a control, but, with experience, gradually replacing the older indirect technique.

FRANCES C. TURLEY.

Roberts, E. J.: The Therapeutic Value of Secondary Rays Produced from Metals by the Action of Röntgen Rays. *Australas. M. Gaz.*, 1913, xxxiv, 239.
By Surg., Gynec. & Obst.

When röntgen rays strike a metal the metal sends forth a secondary ray which is different from the rays it has received and varies in penetrating power according to the atomic weight of the metal exposed: the greater the atomic weight, the "harder" the ray. The quality of the secondary ray depends upon the kind of metal and not upon the röntgen rays used to excite that metal.

Rays filtered through metals must not be mistaken for these secondary rays given off by the metal itself. The filtrating rays can be distinguished from the secondary rays by the barium-platino-cyanide screen, the former causing fluorescence while the latter does not.

The tube chosen to produce the incident ray should be medium "hard" and the metal should be thick enough to prevent filtration of this exciting radiation.

Silver with an atomic weight of 107.66 and copper with an atomic weight of 63 have been found, in the author's experience, to produce a secondary ray suitable for therapeutic purposes, the silver ray being most efficient for deep skin lesions and the copper for superficial lesions.

With these factors as a premise, the author carries out a lengthy course of experiments with secondary rays and concludes that epithelioma and kindred diseases may be treated successfully with these rays instead of X-rays or radium.

His reasons for undertaking this work were the expense of radium, the possibility of using a tube capable of radiographical work to excite the metals to secondary radiation, and the fact that a given metal always produces a secondary ray of a constant degree of penetration, while the radiation from an X-ray tube is made up of rays of varying degrees of penetrating power which change further in quality with every alteration in the vacuum of the tube.

Technique: The patient is protected by a piece of smooth, thin lead in which a hole of the required

size is cut to fully expose the lesion. Over this hole is suspended a wooden frame one inch in thickness and three inches square, to which the metal is fastened. In this way the metal is separated from the lesion about one inch. The metal is three inches square and sufficiently thick to retard the filtration of the rays which excite it. Copper should be from one-sixth to one-fourth of an inch thick and silver proportionately less. The metals must be pure. Both copper and zinc give off secondary rays when excited separately, but an alloy of these metals cannot be excited to secondary radiation by X-rays. The author uses copper of 99.96 per cent purity, the .04 per cent of impurity being oxygen and a trace of silver. The tube is placed four to six inches from the metal. The exposures should be made daily and the treatment must be thorough.

Twenty cases are reported. Two were cases of tenia circinata, each of which were treated with secondary rays from copper, the first by eight sittings of ten minutes each, with a resulting X-ray dermatitis and cure of the disease, and the second by six exposures with the same result.

One was a case of cancrroid of the ala nasi of five years' duration. This was treated first unsuccessfully by the author with X-rays and later cured by secondary radiations from silver in six sittings of ten minutes each.

In one case of generalized psoriasis, a limited area was treated with copper ray. The disease disappeared from this area but remained in other areas that were treated by other methods.

Seven cases were cases of epithelioma. A combination of X-ray and silver ray was used in one case, copper ray in two, and silver ray in the other four. In all but two a successful termination was implied.

One case of lupus was treated with silver ray, and at the date of the report had improved.

Four cases of rodent ulcer were treated successfully with the silver ray and one with the copper ray.

One case of warts treated with the silver ray was much improved when the patient returned home and treatment was stopped.

In one case of eczema squamosa silver ray effected a cure after four applications.

One case of tubercular disease of the neck occurring in an abrasion was treated with the silver ray, but the result is not stated.

FRANCES C. TURLEY.

GYNECOLOGY

UTERUS

Rollett, H.: Intra-uterine Miliary Tuberculosis (Über intrauterine miliäre Tuberkulose). *Wien. klin. Wchnschr.*, 1913, xxvi, 1274.
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The patient was a woman who developed an acute miliary tuberculosis during pregnancy and bore a full-term child (51 cm., 3600 g.), which died 48 hours after birth of miliary tuberculosis. The mother died 18 days after the birth of the child. This unusual occurrence proves that tuberculosis may be congenital, and that even the generalization may occur in utero.

TORGYLER.

Faure, J. L.: Results of Abdominal Hysterectomy for Cancer of the Cervix (Traitement du cancer du col de l'utérus par l'hystérectomie abdominale). *Bull. et mém. Soc. de chir. de Par.*, 1913, xxxix, 1061.
By Journal de Chirurgie.

Faure reports 10 cases in his hospital experience who survived their operation for periods ranging from one year and two months to seven years and seven months. One patient, operated on in September, 1905, died two years later without local recurrence but with generalized cutaneous sarcomatosis. There was without doubt some relation between this and the uterine cancer. A second patient, operated on in January, 1904, died seven years later of pulmonary emphysema without any trace of recurrence. Another, operated on in June, 1904, was well two years and four months later, but has since died; the author has, however, been unable to learn the exact date or cause of her death. A fourth, operated on in May, 1903, died eight years later, but the exact cause of death was not known. Of these four patients, one was undoubtedly permanently cured of her cancer, and there is a reasonable doubt as to recurrence in the other cases. The other six are in good health and completely cured, one after eight years, one after ten, three after eleven, and one after more than fourteen.

Another set of statistics relates to 24 cases, enough from which to draw conclusions of some value. Of these 24 patients, 2, or 8.33 per cent, died from the operation. Of 5 others, or 20.85 per cent, 3 died of recurrence within the first six months. Another lived nearly two years, dying of cerebral tumor. The fifth lived two and one-half years and died of a recurrence in the pleura. Of 17 patients, 70.83 per cent are at present well. Of these, 4 have been operated on less than a year, but there remain 13 who have been operated on for 19 months or longer, so that their future is reasonably assured. Two were operated on 19 months ago; one, two years ago; one, two years and eight months; one, three

years and one month; one, three years and three months; one, three years and eight months; one, four years; one, four years and three months; one, four years and seven months; one, five years and four months; one, five years and six months; one, six years and three months ago. Several of these may still have recurrences, but Faure is more and more convinced with longer experience that they will be few in number.

J. DUMONT.

✓ **Leonard, V. N.: On the Development of Malignant Disease of the Cervical Stump After Supravaginal Hysterectomy.** *Ann. Surg.*, Phila., 1913, lviii, 373.
By Surg., Gynec. & Obst.

From the gynecological clinic of the Johns Hopkins Hospital, the author first reports two cases of carcinoma of the cervical stump after hysterectomy. He then gives a table in which is reviewed a list of 36 cases which have been more or less completely reported up to the present time. Reference is made also to others mentioned in the literature but never completely reported. Leonard does not advocate giving up supravaginal amputation as an operative procedure.

From representative European clinics, Botzong collected 724 cases of subtotal hysterectomy with a primary mortality of 2.61 per cent, and 499 cases of panhysterectomy in which the mortality was 6.6 per cent. Faure found the stump almost always atrophied and regarded it as being in a state of epithelial inactivity decidedly unfavorable to the development of cancer. Of the 36 cases in Leonard's table, it is probable that in at least 16 instances the presence of malignancy had not been detected at the time of operation. Of these 36 cases, 26, or 72 per cent, were operated upon for uterine myomata.

Considering only those cases in which the subsequent carcinoma was probably non-existent at the time of operation, it is found that in 63 per cent of the cases the uterus had been removed for myomata. Leonard, therefore, argues that the question practically resolves itself into a study of the etiological relationship of myomata to cancer and of the technique to be used in removing the myomatous uterus.

Combining the statistics of Winter, Noble, and Cullen, the author shows that of 3,786 cases of uterine myomata, 124 cases, or slightly over 3 per cent, showed either cervical or corporal malignancy. There are no reliable statistics of the absolute frequency of cancer of the uterus, but to place it at 3 per cent would be absurd. Therefore, Leonard concludes that myomata exert an influence incontestably favorable to the development of uterine carcinoma.

Of 2,513 cases of cancer of the uterus, 186 cases, or 7.4 per cent, were of the body, whereas of 215 cases of uterine cancer associated with myomata, 134 cases, or 62.3 per cent, were of the body. As regards the cervix, Winter has reported 25 cases of cervical cancer occurring in 1,270 cases of uterine fibroids, about 2 per cent. Several cases are referred to where cervical carcinoma had been found in the routine examination of the specimens after total hysterectomy for myomata. Leonard argues, therefore, in favor of a "cupping out" of the cervix after supravaginal amputation, as has been advocated by Kelly, as a routine procedure. The technique is simple and its advantages are that (1) the cervix is more easily closed over; (2) a carcinomatous focus deep in the cervix would be discovered; and (3) by the removal of a large amount of the glandular tissue, the chance of subsequent malignant degeneration would be proportionately diminished. Before opening the abdomen, the cervix should be examined under sight, and before closing it, the amputated uterus should be opened and carefully examined for evidences of carcinoma

CAREY CULBERTSON.

- ✓ **King, A. F. A.: Uterine Carcinoma: Another Hypothesis as to Its Cause and Prevention.** *Surg., Gynec. & Obst.*, 1913, xvii, 328.

By Surg., Gynec. & Obst.

The author presents the original idea that cancer originates from the fertilization of matured somatic epithelium cells by spermatozoa. The somatic cells have been transformed into sexual cells by long-continued irritation—they have reduced their chromosomes—and when fertilized, they produce the pseudo-embryonic structures so long recognized as characteristic of cancer. Numerous references from noted authorities are given, in which the fertilization of cells is ascribed to leucocytes and other somatic cells, but not to sperm, as suggested by the present writer, who insists that leucocytes have no such power. Cancer cells, thus produced, are parasites, just as the cells of a normal embryo.

Regarded as a microbic disease (which in a way is correct), the microbe, i. e., the spermatozoön, invades the body from without.

In the development of malignant pseudo-embryonic structures, no embryo appears: it is only the trophoblastic tissues—those that arise normally from the non-embryonic portion of the blastodermic vesicle—that develop into cancer. These trophoblast cells, in cancer, as in a normal embryo, are phagocytic and cytolytic: they corrode and destroy surrounding tissues, opening blood vessels and producing hæmorrhage,—in the one case, the local effusions of blood that lead to normal placental lacunæ, and in the other, the dreadful hæmorrhage of cancer.

As a rule in normal impregnation only one ovule is fertilized, while in a visible speck of proliferated tissue, the number of matured cells liable to

fertilization by sperm must be thousands. If a thousand normal ova were simultaneously impregnated *in utero*, the product would be a cancer and not an embryo.

In support of his views in regard to uterine cancer, the author cites the rarity of the disease in virgins. The exceptional occurrence of cases without coitus, he explains, is caused by means of an intermediary host, such as the warm water of a bath in which spermatic elements may have been diffused.

To prevent cancer, the contact of sperm with senescent proliferated tissues must be prevented. The author suggests amputation of the cervix uteri before cancer begins, in cases of chronically inflamed uteri, and asks whether coitus should not be prohibited after the menopause as a further prophylactic measure in the same line.

- ✓ **Boss, L. M.: The True Prophylaxis of Carcinoma Uteri** (Die wahre Prophylaxe des Uteruskrebses. Ein Mahnruf an die Gynäkologen). *Zentralbl. f. Gynäk.*, 1913, xxxvii, 1000.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author regards the early diagnosis of cancer as less important in cancer prophylaxis than the discovery of means to prohibit its development. Chronic ulcers and inflammations of the cervix and uterus should be treated conservatively and cautiously, for they give the matrix from which carcinomatous tissue takes its start. Since caustics, per se, are likely to cause irritation, he holds that their use should be discontinued. He makes a plea that all gynecologists make observations along this line in order to test its value.

ITTERSHAUS.

- Klotz, R.: Treatment of Inoperable Uterine Carcinoma with Radium and Intravenous Chemotherapy** (Die Beeinflussung des inoperablen Uteruskrebses mit Strahlen- und intravenöser Chemotherapie). *München. med. Wchnschr.*, 1913, lx, 1704.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Report of 13 cases of inoperable uterine carcinoma treated simultaneously with electro-cobalt (intravenously, 5 ccm. to the dose once a week) and moderate doses of radiant energy from radium (200–440 X and 800–1400 mg.-hours). No disturbances of the organism, such as kidney irritation, were observed from the intravenous injection of the metal. Klotz has also tried adding to this combined treatment serum injections from carcinomatous patients. He reports good results.

SAMUEL.

- Wegelin, W.: Post-Climacteric Myosarcoma of the Uterus** (Postklimakterisches Myosarkom des Uterus). *Finska läk.-sällsk. Handl.*, Helsingfors, 1913, lv, 280.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The patient, a woman 57 years old, had always been healthy, had been married 31 years, and had borne eight children, the last, 13 years ago. The menopause occurred at the age of 50. Some time

later irregular hæmorrhages from the uterus began, and these gradually increased in number and quantity. She complained of pain in the left side of the lower abdomen, and for five months the bleeding had been continuous. The examination showed an enlarged uterus reaching several fingers above the pubis. As the microscopic examination of scrapings of the uterus showed the presence of malignancy, the uterus and adnexa were removed by laparotomy. Recovery was uninterrupted. On the posterior wall of the uterus there was a myoma the size of a small apple and its upper part showed sarcomatous degeneration. Microscopic sections showed the presence of two kinds of cells in the sarcomatous portion: (1) Small spindle-shaped or polygonal cells with round or oval nuclei which stained deeply, and (2) large cells, also with large nuclei, which however were stained pale. In the sections the gradual transition of myomatous cells into sarcomatous cells could be clearly seen. The author assumes that both cell forms have developed from the myomatous tissue as a result of the same stimulation, the former from the connective tissue and the latter from the muscular tissue. A case recently described by Ogorék shows similar findings and seems to justify the author's opinion.

BJÖRKENHEIM.

Haultain, F. W. H.: Some Rare Uterine New Growths, Simple Papilloma of Corpus Uteri, Primary Tubercle of Cervix, Diffuse Nodular Fibrosis. *Edinb. M. J.*, 1913, xi, 230.

By Surg., Gynec. & Obst.

This paper presents three rare conditions with the report of a case to illustrate each. Simple papilloma of the corpus uteri was present in a woman 59 years of age. She had noticed post-climacteric bleeding for about twelve years, but only recently had it become troublesome or excessive. Curettage showed typical simple papilloma and the author was confident that the curettage would be all that would be necessary. However, the bleeding persisted and it was necessary to perform a hysterectomy.

Primary tuberculosis of the cervix uteri was found in a virgin 35 years of age. It presented itself as a fungus-like growth, purple in color, and covered with a thick yellowish discharge. Microscopic examination showed the presence of tubercle. Supravaginal removal of the cervix was performed. The patient made a good recovery and has been well since, with no signs of tuberculosis elsewhere. The author recommended hysterectomy instead of the operation which he performed, as it is a safer procedure for ultimate cure.

Diffuse nodular fibrosis of the uterus was found by the author in 700 hysterectomies for uterine fibromas. The pathological condition consists in the formation of innumerable small fibroid nodules varying in size from that of a pin's head to that of a hazel nut. In both cases the condition seemed to have developed in the beginning immediately

beneath the mucosa, and to have gradually but uniformly thickened the uterine wall.

J. H. SKILES.

Ohman, K. H.: Myoma of the Uterus and Ovarian Hæmorrhage (Uterusmyom und Ovarialblutung). *Finska läk.-sällsk. Handl.*, Helsingfors, 1913, lv, 198. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author reports 8 cases of uterine myoma accompanied by ovarian hæmorrhage. He is of the opinion that hæmorrhages occur in the ovaries in the presence of uterine fibroids and that the number of these hæmorrhages has some relation to the uterine hæmorrhage. According to the author the uterine as well as the ovarian hæmorrhages are due to the severe congestion of the internal genitalia in myoma cases.

BJÖRKENHEIM.

Curtis and Oul: Perforating Hydatidiform Mole (Contribution à l'étude de la môle disséquante ou pénétrant). *Ann. de gynec. et obst.*, 1913, x, 321.

By Journal de Chirurgie.

The authors have made an exhaustive study of the subject and report a case of their own. Every perforating hydatidiform mole has, as is shown by its very name, a certain local malignancy. It tends to penetrate the uterine muscle and break through the vessel walls, thus causing serious and sometimes fatal hæmorrhage, either external or intraperitoneal. Most cases, moreover, show general malignancy, histologically by epithelial proliferation, and clinically by the appearance of metastases. All the histological reports published show dissemination of placental elements throughout the uterine muscle, and a tendency for them to be scattered through the bloodstream. The authors' case is the only one which has shown purely local and circumscribed lesions. It is, therefore, relatively benign, but it is a question whether it does not represent merely an early stage in development. As these moles are practically always malignant, radical hysterectomy is the only justifiable treatment in most cases. Manual extraction cannot be done thoroughly enough to guard against recurrence. Abdominal hysterectomy is successful if it is not delayed until the patient is too anæmic. Curettage is very dangerous, as it involves serious hæmorrhage and frequently sepsis.

L. CHEVRIER.

Hansen, T. B.: Rise of Temperature Before Menstruation (Über prämenstruelle Temperatursteigerungen). *Beitr. z. klin. d. Tuberk.*, 1913, xxvii, 291. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Before puberty and after the menopause, the temperature curve of women is the same as that of men; that is, there is an almost parallel course for the morning or minimum temperature and the maximum temperature of the day. During their periodic life, however, there is a rise in the curve before menstruation and a depression afterward, and the minimum curve shows a greater variation than the maximum; so that the post-menstrual type,

with its lower minimum temperature, shows a greater daily variation, while the premenstrual, with an increased minimum temperature, shows a relatively smaller daily range. During the first third of pregnancy the temperature shows the premenstrual type, then falls slowly and in the last half of pregnancy approaches the postmenstrual type, but with a lesser daily range. The curves of pregnant women never show period variations.

In the normal puerperium of nursing women, there is a slight rise of the evening and a marked rise of the morning temperature. A series of experiments shows that an increase of albumin metabolism probably causes the rise in temperature of the premenstrual type. The reason for the greater rise in the morning temperature is that in the morning a decided rise does no harm to the organism, while in the evening the heat-regulating mechanism comes into play. Perhaps also in periods when there are extraordinary demands on the organism, the resting periods are shortened so that the time of the actual minimum temperature is shifted. The importance of the premenstrual period and the first half of pregnancy in tuberculosis is due to the increased albumin metabolism. If a menstrual period occurs without any temperature variation it probably shows a failure of the metabolic reaction. Numerous reproductions of curves and an extensive bibliography are given.

HÖLDER.

Cantoni, V.: The Changes in the Blood During Menstruation (Über die Blutveränderungen während der Menstruation). *Arch. f. Gynäk.*, 1913, xcix, 541.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Cantoni investigated the coagulability of blood according to the methods of Wohlgemuth. He examined the test tubes not only after 24 hours, but also after the third, fifth, seventh, ninth, and twelfth hours in order to determine the possible changes which occur in the fibrin ferment and fibrinogen content of the blood during menstruation. The first examination was made at the height of the hæmorrhagic period, and the second, about fifteen days before its beginning. Only observations from the same individual were compared. Seven experiments showed that the blood of the menstruating woman coagulates normally. The local cause that prevents blood excreted from the genital organs from coagulating has yet to be determined.

A second series of investigations was made to discover whether there is actually a diminution in the alkalinity of the blood during menstruation. According to the compensation method of Poggen-dorff-Ostwald a determination was made of the apparent lowering of the potential between a hydrogen electrode immersed in the serum and a normal mercury electrode prepared with a solution of $\frac{1}{8}$ -N NaCl. In two cases there was a slight increase, and in two, a slight diminution of the acidity. These differences, however, did not exceed the

limits of the changes in the reaction of normal blood.

Investigations were carried out also to determine the total amount of the blood albuminoids before and during menstruation by means of the immersion refractometer of Pulfrich with the assistance of Reiss' table. For this purpose blood was obtained from five women, fifteen and seventeen days before menstruation, during the highest phase of the hæmorrhagic period, and seven days after the cessation of menstruation. The refraction index, and with it the albumin content of the blood, increased slowly with the approach of menstruation. Their maximum coincided with the height of menstruation, and they decreased again with the decrease of menstruation. Whether the change in the refraction index in menstruation is caused by the loss of blood or by other causes still remains to be determined.

HÖLDER.

Dyrenfurth, F.: The Detection of Menstrual Blood by the Glycogen-Iodine Reaction (Zum Nachweis des Menstrualblutes durch die Glykogenjodreaktion). *Ztschr. f. Med.-Beamte*, Berl., 1913, xxvi, 452.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The technique for the detection of menstrual blood is as follows: Smallest portions of the soiled cloth are rapidly pulled to pieces in a drop of a saturated solution of sodium bicarbonate to prevent the separation of the glycogen. A drop of Lugol's solution is then added. On microscopical examination it will be observed that the blood corpuscles have completely disappeared. The brown discolored epithelium of the vagina, which before could not be recognized at all or recognized only indistinctly, can now be seen easily with a low power. The dependability of the method has been tested in various ways and found to be good. Permanent preparations cannot be made.

BENTHIN.

Greife, H.: Periodic Pains in Women (Über periodische Schmerzen bei Frauen). *Petersb. med. Ztschr.*, 1913, xxxviii, 175.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author points out the great practical importance of the symptom of periodical pain in women, first described by Simpson and recently rescued from oblivion by Sneguireff. At the same time each day they have violent pains in the abdomen, which always last the same length of time. These periodical recurrences indicate uterine carcinoma or other foreign inclusions in the uterine cavity, and are caused by a periodic discharge of the collected secretion. The author cites the case of a 50-year-old woman who had these unendurable pains, first from one to five o'clock, and later from nine to eleven o'clock in the evening. A supravaginal amputation was performed for myoma; an adenocarcinoma, apparent both macroscopically and microscopically, was found, so that afterwards the cervix, which had been left, had to be removed.

RITTERSHAUS.

Chase, W. B.: Menorrhagia and Metrorrhagia, Treatment and Remarks on Recent Claims by Radiotherapy. *N. Y. St. J. Med.*, 1913, xiii, 468.
By Surg., Gynec. & Obst.

The author states that each menstruating woman is an individual equation in considering her periodicity and the various degrees of her resistance to the loss of blood. Some of the etiological factors having a pathological basis are uterine myoma, degenerative chronic endometritis, inflammations of septic origin and those incident to miscarriage, subinvolution, uterine displacements, etc. Those of systemic origin include purpura, malaria, nephritis, arterio-sclerosis, and exhausting acute and chronic diseases. Bleeding, which is of reflex origin, is seen at puberty, after a local shock, or incident to a powerful emotion.

He divides the treatment into hygienic, medical, and surgical. All predisposing or exciting causes must be removed. The patient requires proper food, exercise in the open air with caution against fatigue, and she must live and sleep in a well-ventilated apartment. She should recline in a horizontal position with the foot of the bed elevated.

Medical treatment. Constipation should be regulated by diet, as far as possible, and the drugs used should be mild salines, phenolphthalein, and oil, rather than aloes and vegetable cathartics. Phthalate of cotarnin, opium, hydrastinin, and ergot are particularly useful. Organic iron is useful in some cases; the calcium salts are indicated if the coagulation time is diminished, also horse serum used by intravenous injection. Normal saline must be avoided during active bleeding. The high nervous tension should be controlled by bromides.

Surgical treatment. This procedure must not be delayed too long. Myoma of the submucous variety is most productive of hæmorrhage and requires an early hysterectomy. Curettage is usually all-sufficient in degenerative changes of the endometrium. Uterine displacements must be corrected and uterine polypi must not be overlooked. Tamponade is often found useful. The thermocautery frequently gives relief in cancer of the cervix. The author has had gratifying results with the local application of dilute acetic acid and acetone, followed by the persistent use of radium on alternate days from fifteen minutes to six or twelve hours.

After thirty-five years of age, a hæmorrhage in a woman should always suggest malignancy. In the last census reports it is shown that one woman in every fourteen died of cancer. After forty-five years of age, the ratio is one to nine.

Deciduoma malignum is a very puzzling form which causes hæmorrhage, and as soon as the diagnosis is made in the laboratory an immediate hysterectomy must be done. A radical change of treatment in hæmorrhages due to myomata and in cases where the pathological causes are lacking has been instituted in Germany and other continental clinics by the use of the X-ray. This treatment is especially indicated where the patient refuses an operation or has in-

sufficient strength or is unable to stop work. Eight weeks of röntgentherapy is sufficient. The author quotes Werner as regarding the action of the X-ray to be that of influencing the chemistry of the body cell, probably that of the ovary.

ROBERT T. GILLMORE.

Baldwin, J. F.: Dysmenorrhœa from Imperfect Development of the Uterus or Malformations. *Med. Rec.*, 1913, lxxxiv, 480.

By Surg., Gynec. & Obst.

The author calls attention to the fact that a certain percentage of cases of dysmenorrhœa are due to malformation or imperfect development of the uterus. Such patients give a history of pain, commencing at the beginning of menstrual life and continuing in spite of all treatment. On careful examination, with the patient under anæsthesia, the uterus will be found to be malformed or below normal in size. One of the two cases reported in this paper had a bicornuate uterus fully developed on the right side, but the left cornu was greatly swollen and its cavity was filled with blood and was not draining.

F. D. HOLMES.

Stark, J. N.: Four Cases of Inversion of the Uterus. *J. Obst. & Gynec. Brit. Emp.*, 1913, xxiv, 68.

By Surg., Gynec. & Obst.

Two of Stark's cases were puerperal and two non-puerperal. Of the puerperal, one was acute and one chronic. The first patient, a primipara, died of shock soon after the inversion, which occurred with the delivery of the placenta by Crédé's expression. The second case, that of a primipara also, was discovered four months after labor, during which time there had been a more or less continuous bloody discharge. Reposition was effected by abdominal section and incision in the posterior median line of the rigid neck of the inverted peritoneal sac. The author formulates the treatment of puerperal inversion as follows: 1. If there is little or no shock, reduction should be made at once, the placenta being first removed if still adherent. 2. If there is severe and serious shock energetic and immediate measures must be adopted to combat it, time not being wasted in attempts at replacement, which, if successful, might aggravate shock. 3. When the condition has improved, taxis should be employed gently but scientifically under anæsthesia. 4. In cases seen after the lapse of months or years, if moderate taxis fails, the uterus should be reinverted if possible by abdominal section and incision.

Each of the two non-puerperal cases was the result of a malignant growth in the fundus, Nigel's second patient being an unmarried nullipara long past the menopause. He regards the only treatment worthy of consideration to be the removal of any tumor present and either hysterotomy or hysterectomy. The former treatment is advised when the patient is a young parous woman. The latter is found expedient (1) if a malignant tumor is present; (2) if there is either thickening and hardening of the uterine wall

or softening and atrophy of the musculature; (3) if there are dense peritoneal adhesions binding down the uterus or fixing bladder and rectum. The abdominal route should be chosen for hysterectomy rather than the vaginal. CAREY CULBERTSON.

Westermarck: The Question of Prolapse, Interposition of the Uterus (Prolapsfrage, Interposition des Uterus). *Versamml. d. Nord. chir. Vereins*, Kopenh., 1913.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author believes that his method of lateral colporrhaphy in conjunction with the other plastic methods gives the best results, the records showing less than 7 per cent recurrences. By means of an ordinary phantom he demonstrated the manner of action of his "colporrhaphy," which stretches the vagina laterally. Furthermore, the priority of the so-called interposition operation between bladder and vagina belongs to him. The method which he employed for cure of cystocele was described under that name in "Hygiea." It is not identical with that of Wertheim, but with that described later by Schauta, and it is indicated only in cystocele cases. In cases of total prolapse recurrences occur frequently by this method, and in such cases, therefore, it is necessary to perform the usual vaginal plastic operations in conjunction with the above mentioned lateral colporrhaphy. He has employed the interposition operation in 40 cases of cystocele without any recurrences. In conclusion, the author states that since December, 1912, he has followed the suggestion of Carrel and employed vaseline-catgut for the buried sutures and vaseline silk for the external sutures. According to Carrel, this procedure prevents the formation of thrombosis and pulmonary embolism, which are the most dangerous and most frequent complications of prolapse operations. GAMMELTOFT.

Von Radwanska, W.: Congenital Total Prolapse of the Uterus in a New-born Infant with Spina Bifida (Der angeborene gänzliche Prolapsus uteri bei einem mit Spina bifida behafteten Neugeborenen). *Gynäk. Rundschau*, 1913, vii, 515.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author reports 14 known cases of prolapse of the uterus in the new-born. Twelve times spina bifida was also present. The spina bifida causes defective innervation of the pelvic floor, favoring development of prolapse. GRÜNBAUM.

Olow, J.: Results of the Operative Treatment of Genital Prolapse (Resultat der operativen Behandlung des Genitalprolapses). *Versamml. d. Nord. chir. Vereins*, Kopenh., 1913.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

At the gynecologic clinic in Lund, 153 cases of genital prolapse were operated upon between 1909 and 1911. In 108 of these a re-examination was performed. In 22 cases a plastic vaginal operation was done. Twelve of these showed absolutely no signs of recurrence; 4 were subjectively well, but

the result was not perfect objectively. Three cases were in fairly good condition and 3 had recurrences. Of the 12 cases which were treated with ventrofixation alone, 8 were re-examined, 2 had recurrence and 6 had no recurrence. A total of 89 cases were treated with ventrofixation and a plastic vaginal operation. Of these, 3 died and 72 were re-examined; 53 of these showed no signs of recurrence whatsoever, and 6 were subjectively well, but objectively the result was not so good. A fair result was obtained in 5 cases, and in 8 a recurrence set in. A ventral hernia developed in 5 cases at the site of the scar. In all the successful cases the fixation was firm, but in 2 partially successful cases and in 3 of the recurrences the uterus did not remain in place.

Total extirpation of the uterus was performed in 4 cases, of which 3 could be re-examined. Two cases were completely successful. In one case the patient is well, but the objective findings are not perfect. Total extirpation of the uterus plus vaginal plastic operation was performed in 3 cases. One case was re-examined and showed no evidence of recurrence. Extirpation of the vagina was performed once and recurrence did not set in.

GAMMELTOFT.

Hartmann: Pessary Treatment (Pessarbehandlung). *Versamml. d. Nord. chir. Vereins*, Kopenh., 1913.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Hartmann reports the pessary treatment employed at the gynecological clinic of the Reichshospital. Operative treatment is carried out wherever possible. The action of the ring-shaped pessary is regarded as insufficient, as it rises on edge and permits the cystocele to glide down ahead of it. At times it also dilates the hiatus. The transverse pessaries held in place by a stem are to be preferred, the action of the stem being to fix the pessary and thus prevent slipping, the soft structures being rarely pressed upon. All forms of prolapse, from the smallest to the largest, have been treated in this way; but a definite amount of muscular sufficiency is necessary to give the pessary support, as it should rest on the pelvic floor. Subjective improvement can usually be obtained, but complete reposition is seldom possible. It is often possible to decrease the size of a rectocele by means of a transversely placed pessary, as it draws the posterior vaginal wall upward. Such treatment must be carried on cautiously, and it is necessary to change the pessary every two to three months. Douches must be given daily. Pressure symptoms were never observed with hard rubber rings, but severe colpitis frequently occurred. GAMMELTOFT.

Childe, C. P.: Suggestions for the Technique and Performance by a New Method of Wertheim's Abdominal Panhysterectomy. *Brit. M. J.*, 1913, ii, 721.

By Surg., Gynec. & Obst.

After the patient has been anesthetized, she is placed in the lithotomy position for operation.

Scissors and the sharp spoon are used to remove the growth and the surface is cauterized with Paquelin's cautery. The vagina is dried and painted with a 2 per cent iodine in spirit. The raw surface and vagina are packed with dry sterile gauze, one end of which is left hanging outside of the vagina. It is removed by an assistant just before cutting the vagina. The area surrounding the uterus is covered with two large gauze packs soaked in normal saline previous to the division of the vagina. After division the edges are folded over the uterus while it is lifted out of the pelvis.

Technique of the pelvic wound. 1. Try to secure perfect hæmostasis. 2. Leave behind no foreign bodies, e.g., ligatures. 3. Discard the gauze for drainage purpose, unless it is impossible to arrest the venus oozing; in which event the gauze should be removed in 24 hours.

Childe hastens the prolonged dealing with the parametrium and vagina by using only four ligatures in the operation; one for each ovarian and one for each uterine artery. The round ligament is crushed and divided without ligature.

The parametrium is clamped in sections after the uterine arteries have been tied and divided. Before the clamps are removed, the divided surfaces are seared with Paquelin's cautery. The portion of the vagina to be divided is crushed in order to control hæmorrhage. The author has devised some strong forceps with short handles which possess sufficient crushing power for the purpose. After division the cautery is again used. The cauterization will destroy any cancer cells in the field and there will be no ligatures left to act as irritants or sources of infection. Finally the peritoneum is sewed over and the abdominal wound is closed.

ROBERT T. GILLMORE.

Brandt: The Results Obtained with the Schauta-Wertheim Operation (Die Resultate der Behandlung durch die Schauta-Wertheimsche Operation). *Versamml. d. Nord. chir. Vereins, Kopenh., 1913.*

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Brandt has employed the Schauta-Wertheim operation for a number of years in severe and total cases of prolapse. It can be employed only where the possibility of subsequent pregnancy is excluded. In this latter class of cases the usual methods may be employed, even though they are frequently accompanied by recurrences.

Only a total of 10.2 per cent of sterilization operations were necessary. Ninety-five patients were operated upon by this method, 75 of whom were re-examined. Of these, 75 per cent were cured and in 17.5 per cent of the cases a marked improvement had occurred. In 3.4 per cent of the cases, recurrence took place, and the operative mortality was 3.4 per cent. In the early operations the cervix, instead of pointing up and posteriorly, pointed forward and downward, due to a kinking at the junction of the cervix and corpus. The patients again complained of the feeling of prolapse, al-

though the uterus was in place. This trouble can be prevented in two ways — either by amputation of the cervix or by separating the bladder from the cervix laterally. There are many vessels laterally and it is necessary to ligate on both sides. Brandt does not doubt that in the course of time it will be possible to improve these results still further, especially in regard to the operative mortality.

GAMMELTOFT.

ADNEXAL AND PERIUTERINE CONDITIONS

Vogt, E.: Contribution to Melanosarcoma of the Ovary (Beitrag zu den Melanosarkomen des Ovariums). *Ztschr. f. Geburtsh. u. Gynäk., 1913, lxxiii, 223.*
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author reports on two cases from the literature, the six cases of Soubeyren and Rider, and his two cases of secondary melanosarcoma of the ovary in general sarcomatosis. The primary sarcoma was in the chorion in one of his cases, in the skin in the other case. He makes a careful report on the histology. The one case is an exception to the rule that primary sarcomata are diffuse and secondary sarcomata are easily enucleated. The ovarian sarcoma in question was quite diffuse. The age of the patients ranged from 30 to 44 years and all women were still menstruating. The prognosis is fatal, in spite of treatment, within two years after the appearance of the primary tumor or the presence of symptoms. The diagnosis is substantiated by melanuria and the finding of the pigment in the urine according to the Eiselt reaction.

MERTENS.

McAllister, V. J.: A Preliminary Investigation Concerning Glycogen Content of the Mucous Membrane of the Fallopian Tube. *J. Obst. & Gynec. Brit. Emp., 1913, xxiv, 91.*

By Surg., Gynec. & Obst.

This paper by McAllister comprises the results of a preliminary inquiry into the glycogen content of the Fallopian tube. The chemico-histological changes of the uterine mucosa having been gone into thoroughly, and this study having revealed cyclic variations there, the author has undertaken to ascertain its content with respect to the cells of the tubal mucous membrane. The material examined comprised the Fallopian tubes from 29 gynecological and obstetrical cases of different kinds. The two chief aims in carrying out the investigation were to discover, first, whether the mucous membrane of the tube ever contained glycogen, and second, whether, in case glycogen were present, the glycogen content was subject to a cyclic variation in relation to menstruation. The first question McAllister is able to answer definitely in the affirmative, as in seven of the tubes examined glycogen was present in considerable amount in the cells of the mucosa. Pregnancy is not essential to its presence, however.

The second question required further study, but McAllister's results make it possible to state that

undoubtedly the glycogen content of the tubal mucosa undergoes considerable variation, being glycogen-free when the endometrium presents all the signs of secretory activity and its epithelial cells are loaded with glycogen; and, vice versa, when the endometrium is free from glycogen the tubal mucous membrane may contain it in considerable amount. Tubal decidual cells seem to contain it in small amount as compared to its content on the part of the uterine decidual cell. Inflammation seems to exert no influence in increasing the glycogen content. In one instance it was found in small amount in the cells of the corpus luteum.

CAREY CULBERTSON.

Patel and Olivier: Conservative Treatment of Tuberculosis of the Adnexa (De la thérapeutique conservatrice dans le traitement de la tuberculose annexielle). *Rev. de gynéc. et chir. abdom.*, 1913, xxi, 23. By Journal de Chirurgie.

Patel and Olivier have studied the cases operated on at the surgical clinic at Lyons since 1900 for tuberculosis of the adnexa, selecting only those where the disease had been demonstrated histologically or bacteriologically.

They gave the ultimate results in the cases treated conservatively and draw the following conclusions. The vaginal route ought to be abandoned entirely except in cases with secondary infection, where there is a collection of pus in the pouch of Douglas interfering with the function of the rectum. Of 16 patients operated on through the vagina, 12 had to be reoperated by the abdominal route. Simple laparotomy is the ideal conservative treatment, but in cases where there are ascites and granulations of the tubes, it should be completed by salpingectomy. In some cases the uterus alone had been preserved, but Patel and Olivier believe that this organ without the adnexa is dangerous and useless. It should be left, after bilateral castration, only in case it is so surrounded by tuberculous infiltration as to render its removal impossible or very difficult.

As to mortality and duration of life afterward, conservative methods give about the same figures as radical. The survivals extend over a period of nine years. The health of the patients seems to be good, but there are almost always some after effects, such as abdominal pain, tenderness on pressure, or, in one case, hypogastric fistula. All the patients except one menstruate, but the periods are often long, copious, and painful. There is leucorrhœa in all the cases; pregnancy occurred in only one.

It is a question whether the continuance of menstruation is important enough to warrant conservative treatment, with its danger of recurrence, especially as castration in these patients does not produce any particular disturbance. Patel and Olivier believe that it is justified in cases where the tuberculosis has assumed a dormant form, so to speak, such as tubal cold abscess and tuberculous hydrosalpinx. These two forms are benign, and when they are distinctly localized in the tube the

preservation of the uterus and ovaries is justified. When the ovaries are affected, however, either alone or with the tube, a radical operation should be performed.

LABEY.

Nowikoff, A.: Therapeutic Significance of Castration (Therapeutische Bedeutung der Kastration). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, xxviii, 777. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In severe cases of dysmenorrhœa, in which all other therapeutic measures fail, the author recommends castration as the most certain method of cure. Whenever castration was performed for this purpose, the author always found a hypertrophied but histologically normal ovary. Frequently this finding is combined with malformations or with myomata, but many times the hypertrophy is the only finding, so that Nowikoff considers this a clinical entity. The poor results obtained by castration in osteomalacia are well known. In pulmonary tuberculosis the author prefers castration to hysterectomy. It causes a disappearance of menstruation and of the monthly hyperæmia, which may cause exacerbations of the pulmonary trouble. The vasomotor disturbances disappear in time. Phenomena due to lack of ovarian secretion were not observed.

GINSBURG.

Moriarta, D. C.: Pelvic Cellulitis. *Albany M. Ann.*, 1913, xxxiv, 543. By Surg., Gynec. & Obst.

The author urges that operations in acute pelvic infection should be limited to those for drainage and for peritonitis. Usually these are performed best through the vagina. Vaginal incision to be of value must be free. The earlier the pent-up pus is released in pelvic infection, the less damage will be done to the pelvic contents.

An incision in a pyosalpinx is useless as a curative measure, though often useful in relieving pressure. In chronic cases the author believes it is conservative surgery to remove the diseased tubes and ovaries.

A gonorrhœal infection may extend through the structures of the tube and cause a localized peritonitis with the formation of many adhesions. Gonorrhœal peritonitis rarely extends and involves the general peritoneum. Gonococci may cause a salpingitis, a pyosalpinx, and a peritonitis, but never a pelvic cellulitis.

Tuberculosis in the pelvis is usually primary in the tube, and is generally disseminated into the other tissues. Tuberculous infection may be spread by the blood, the lymphatics, and contact.

The author urges the necessity of accurate diagnosis before uterine instrumentation. Curettage is useful in sapræmia, but usually fatal in septicæmia. If in doubt concerning the actual condition — even if there be heat and induration associated with pain, with or without a chill, a rapid pulse, and some temperature — curettement should be avoided unless the character of the organisms has been determined by a bacteriological examination.

C. H. DAVIS.

EXTERNAL GENITALIA

Rothe, H.: Is a Bloody Dilatation Necessary in Vaginismus (Ist beim Vaginismus eine blutige Erweiterung notwendig)? *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxiii, 479.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author considers vaginismus as a psychical reflex induced by a phobia, but does not rely alone upon the non-bloody division of the constrictor cunni. Psychical influence is also necessary. After a manual dilatation under narcosis, the patient should have inserted a cotton plug containing cocaine salve for ten minutes, twice daily, followed by the introduction of a dilator kept in place for an hour. The author begins with dilators ranging from 20-24 mm. The dilators may be made of polished wood or hard rubber. During the introduction the abdominal pressure should be utilized as antagonistic to the spasm of the muscles involved.

MOHR.

Parham, F. W.: A Case of Inaccessible Vesico-Vaginal Fistula Operated Upon by George Gray Ward's Method. *Surg., Gynec. & Obst.*, 1913, xvii, 368.

By Surg., Gynec. & Obst.

The fistula followed a total hysterectomy and occupied the apex of the left vaginal sulcus. Efforts at closure per vaginam by the ordinary method failed, as did a second attempt by opening the bladder and closing the fistula within the bladder and per vaginam.

At the third operation Ward's method was tried. This consists in making an incision from just behind the urethra backward to the posterior wall of the vagina, and another at the level of the fistula across the vagina. The four flaps are dissected up freely until the bladder is sufficiently mobilized to be brought down by a straight sound introduced into the urethra. The fistula is then easily sutured. It is important to begin this dissection in the center, where the lines of cleavage are well marked.

Nothing new is claimed in this mobilization of the bladder, as it has been done by many operators since Mackenrodt so clearly described his technique in 1894; but the special technique as given by Ward for cases of fistula consequent upon total hysterectomy is so clear and simple that it will appeal to any surgeon confronted with such a case.

The author also calls attention to the use of the fascial flap in these cases, and refers to one successfully done by Schmidt, who placed a flap of the fascia lata over the sutured fistula and then sewed the mucous membrane over that. E. L. CORNELL.

Wolff, M.: The Treatment of Gonorrhœal Vaginitis in Children with Autogenous Vaccines. *Chicago Med. Rec.*, 1913, xxxv, 462.

By Surg., Gynec. & Obst.

The author discusses his reasons for using autogenous vaccines in treating gonorrhœal vaginitis

in children, giving his methods of preparing and administering the vaccine and tabulating his results in a series of forty cases.

Either stock or autogenous vaccines may be used, but the latter type is to be preferred as it offers a more specific method of treatment. In the first place, as the particular strain is very important, the organism of the stock vaccine may not be the one needed at all; moreover, the vaccine should be made from the organisms recovered from the patient and not from those resulting from several transfers of these organisms on artificial media. The vaccine must be fresh.

Five culture tubes are inoculated, three of human blood-agar or hydrocele- or ascitic-agar, and two of plain agar. After forty-eight hours' incubation at 37° C. all of the growth from all of the tubes is used in making the vaccine. If the vaccine cannot be made at that time, the tubes are put into the ice-box so as to stop the growth. The vaccine is killed, standardized, and stored in the usual manner. For at least two days previous to the time that the cultures are taken for the vaccine, the child should be given no local treatment.

The vaccine is injected hypodermically and the initial dose is twenty-five to fifty millions. Usually babies and small children are given a smaller dose than older patients. The reaction may be slight or severe, and disappears readily. In some cases there may be no reaction at all. Injections should be separated by an interval of from five to seven days. Smears should be made two weeks after the initial dose, and at intervals of a week thereafter. If at the end of six weeks, the case still needs treatment, a second vaccine should be made.

In a series of forty cases treated as above outlined, no other treatment was used except ordinary external cleanliness, and before each patient was discharged as cured three negative smears were obtained, one week apart, after treatment had been stopped. Only one case returned after a period of two months with a recurrence, and while it has been one year since any of these cases were treated, this one, so far as known, is the only recurrence. The ages of the patients varied from one month to one and a half years. The number of injections given varied from four to ten, the average being seven, which means thirty-five days as the average time of treatment.

A carefully prepared table is presented, showing in detail the treatment with mixed autogenous vaccines. For gonorrhœal vaginitis in children, the author considers this treatment 100 per cent efficient. In adults, it shortens the time of treatment "and in many cases shows remarkable results when used in conjunction with the usual local procedures. In children, however, vaccine should be the only treatment given. There is no tampering with the child's genitals or reproductive organs, which in itself is a great thing for the child; and moreover, the cure is quick and harmless, as there is nothing to contra-indicate its use."

C. D. HOLMES.

Barnett, N.: Vulvovaginitis in Young Children; Its Control and Successful Treatment. *Arch. Pediat.*, 1913, xxx, 650. By Surg., Gynec. & Obst.

Fifty cases are reported, only twenty-six of which continued systematic treatment. The duration of treatment varied from one week to six years, but the average was eight and one-half months. It was shown in examination of these cases by means of the urethral speculum that the cervix was always affected. Superficial ulcerations were frequently to be seen in this region.

Six cases showed complications: one was complicated with arthritis of the shoulder, one with arthritis of the wrist, one with chronic general peritonitis, one with painful heel (periosteal exostosis), and two with pelvic peritonitis.

Except in complications, Barnett had no results whatever from the use of vaccines. In no case was a culture from the urethra positive. The treatment as given by Barnett was as follows:

"The external genitalia are sponged off and the labia separated; the Kelly endoscope is inserted as far as possible, the size of the endoscope depending on the size of the opening in the hymen and not on the age of the child. An endoscope of proper size should cause no pain — this is of the utmost importance. After one or two sittings the little patients will allow this procedure quite readily; the obturator of the endoscope is withdrawn, the light inserted, and with no other manipulation than withdrawing the tube one-quarter to one-half inch the cervix presents at the distal end of the tube; any secretion is then removed with the applicator, and iodine (Lugol's solution) is applied directly to the cervix and vaginal walls as the endoscope is slowly withdrawn. These endoscope treatments are carried out three times a week. The important fact to bear in mind is infection of the cervix and the treatment should be directed toward elimination of this focus of infection."

As to prophylaxis he advises that the children should be kept separated from other children in every possible way, and the teachers and social workers should be taught the prevalence of the condition.

Fleischauer: Operated Vulvocarcinoma (Operiertes Vulvacarcinom). *München med. Wchnschr.*, 1913, lx, 1741.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

According to the author, the poor permanent results obtained in cases of vulvocarcinoma are due to the fact that the anatomic relations of the lymphatics of the external genitalia are not adequately considered. It is not sufficient to remove only the external inguinal glands but, following the suggestion of Rupprecht, the deep glands lying in the fatty tissue of the fossa ovalis along the inner side of the femoral vein must also be removed on both sides. Furthermore, according to Stöckel, the hypogastric and iliacal glands should also be removed by laparotomy.

RUNGE.

Martin, A.: Sarcoma of the Labia Majora (Sarcome de la grande lèvre). *Rev. de gynec. et de chir. abdom.*, 1913, xxi, 177. By Journal de Chirurgie.

Martin observed a case of sarcoma in this unusual locality and looked up the similar cases in the literature. He found they were generally ovoid tumors. With the long axis following that of the labia, almost regular in contour, with possibly a few more or less prominent nodules. There is generally nothing in the gross appearance to enable one to differentiate them from other tumors. The skin seems healthy, or sometimes a trifle cedematous, but it is not adherent. Below, the tumor is adherent to the prepubic fascia or to the bone, or may extend toward the inguinal canal. In Martin's case the inguinal glands were involved, so that they could be seen from some distance. Occasionally the tumor is pedunculated (Hinselmann).

On section the tissue is firm and lardaceous, resembling carcinoma; sometimes it has the classical appearance of melanosisarcoma.

Histologically fuso- and globo-cellular sarcomata have been described, but they are rare. Bormann describes peritheliomata originating either in the adventitia of the blood-vessels or in the endothelium of the perivascular lymph spaces.

These tumors originate in the subcutaneous cellular tissue. Often the sarcoma has been preceded by a nævus or a cutaneous or subcutaneous angioma — in other words, a malignant degeneration of a congenital tumor.

Clinically, there is a first stage which may last for years, when there is only a small indolent nodule or a more or less pigmented nævus. During the second stage there is more or less rapid growth of the tumor, which becomes troublesome but not painful. In the third stage there is a tendency to spread to the inguinal glands, to the labia minora of the same and the opposite side, and to the clitoris or the muscles; to compression of the internal saphenous and of the femoral, resulting in cedema, and finally in metastases and cachexia.

In the majority of cases absolute diagnosis can be made only with the microscope. The prognosis is grave. Treatment is surgical. If the glands are involved they should be removed en masse with the tumor. Frequently there are adhesions to the saphenous or femoral. Radiotherapy should be used in after-treatment. The results are not brilliant, even when operation is performed early; and the patient generally dies of metastases.

GEORGES LABEY.

Schultz, T.: The Pelvic Floor and Its Relation to the Genesis of Genital Prolapse (Der Beckenboden und sein Verhältniss zu der Genese der Genitalprolapse). *Versamml. d. Nord. chir. Vereins*, Kopenh., 1913.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The pelvic organs are carried by the muscular pelvic floor, and the author claims the explanation of the method of closure given by Halban and

Tandler is incorrect, and that the urogenital diaphragm, the perineal body, and the prerectal portion of the levator ani are of no significance. The opening in the levator is no sagittal split which closes itself transversely, but a round opening or a transverse split which is closed longitudinally. The closure is effected by the puborectalis muscle, which acts as a sphincter urogenitoretalis, or in short as a sphincter pelvis.

The author showed the action of this sphincter upon the vagina and rectum by means of plaster casts. Genital prolapse is due to an insufficiency of the sphincter pelvis. The cases of post-partum prolapse are due principally to a tearing of the anterior insertion points of this muscle. The prolapse in the newborn is due to a paralysis of this sphincter, and the prolapse of nulliparæ to a dilatation of this sphincter, in the same manner that an invagination of the colon dilates the sphincter ani externus and allows it to prolapse. A retroversion of the uterus plays no part as an etiological factor, and the elongation of the cervix must be explained according to Ziegenspeck's theory and not according to Halban's and Tandler's theory.

MISCELLANEOUS

Daniel, C.: Inguinal Hernia of the Female Genitalia (Die Leistenhernien der weiblichen Geschlechtsorgane). *Beitr. z. Geburtsh. u. Gynäk.*, 1913, xviii, 312.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Inguinal hernias of the female genitalia occur at all ages, most frequently in the first two years. Their early appearance and the frequent accompaniment of malformation of the genitals, indicates that these hernias are of congenital origin. The contents may be the uterus alone or with the adnexa, the ovary alone or with the tube, the tube alone rarely, or most frequently the adnexa of one side, the latter in 10 out of 21 cases. Congenital elongation of the broad ligaments and tubes is an etiological factor. Acquired genital hernias often result from a pregnancy which has caused elongation of the uterine ligaments. Even in double ovarian hernias, pregnancy and normal childbirth are possible.

Diagnosis of a genital hernia is difficult. Ovarian hernia is the easiest to diagnose, because the round, smooth, symmetrical ovary can be felt; it is sensitive to pressure; the pedicle is in the inguinal canal and there are various menstrual disturbances. Bimanual examination should always be made. Dangerous complications are incarceration, infection of the ovary and tube, pregnancy, and, most frequently, torsion of the pedicle of the hernia, resulting in peritonitis and intestinal obstruction. If the adnexa becomes infected all stages from catarrhal salpingitis to pyosalpinx may appear. Conservative treatment with a truss is indicated up to the fifth year, since in early childhood recovery often takes place; after five years of age, surgical treatment. In uncomplicated hernias the prolapsed organs

should be spared as far as possible. The author describes a case of his own presenting right salpingo-oöphoritis in the sac of an inguinal hernia in a woman of 31. After a radical operation for hernia, and castration on one side, recovery was made.

GRAEUPNER.

Aschner, B.: Passionate Phenomena: Hyperæmia and Hæmorrhagia of the Female Genitalia Following Subcutaneous Injection of Ovarian or Placental Extract (Über brunstartige Erscheinungen: Hyperämie und Hämorrhagie am weiblichen Genitale nach subcutaner Injektion von Ovarial- oder Placentarextrakt). *Arch. f. Gynäk.*, 1913, xcix, 534.

While experimentally producing milk-secretion by means of the subcutaneous injection of ovarian and placental extracts, the author noted a hyperæmia of the genitalia. He could produce hæmorrhagia, even hæmatometra, in the uterine mucosa of guinea pigs, the ovaries containing an unusual number of ripening follicles. He believes that this brings about the hyperæmia in the genitalia. Placental extracts work even more strongly, and he suggests that they be used in amenorrhœa, sterility, and climacteric disturbances. HAEF.

Albers-Schönberg: The Treatment with the So-Called Deeply Penetrating X-Rays in Gynecology (Referat über die gynäkologische Tiefentherapie). *Fortschr. a. d. Geb. d. Röntgenstr.*, 1913, xx, 93.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author says the gynecologist should make the diagnosis, set the indication for treatment, and observe the clinical course of the disease when X-ray treatment is employed, and the röntgenologist should determine the technique and dosage to be employed. Animal experiments have proved that macroscopically there is a decrease in the size of the ovary. Histologically, a disappearance of the graafian follicles and a quantitative decrease in the germinal epithelium with degeneration could be demonstrated. These same changes could be observed also in the human ovary. All myomata are indications for X-ray treatment in patients of 40 years or over, the younger women requiring larger doses. Its use is contra-indicated in polypoid or gangrenous tumors showing active hyperplasia of the epithelium with polyp formations, cystic tumors with sarcomatous and carcinomatous degeneration, or those in which such degeneration is suspected. Of much importance is the disappearance of hæmorrhage and the decrease in the size of the tumors that result. Enlargements of the tumor, however, may occur under treatment in spite of the fact that the hæmorrhage has ceased. Menorrhagias and metrorrhagias are likewise influenced favorably. Side reactions occurred similar to those reported by other authors. The author's conception of the action of the rays is similar to that of other men previously reported. About 75 per cent of the author's cases were cured. IMMELMANN.

OBSTETRICS

PREGNANCY AND ITS COMPLICATIONS

Andrews, H. R.: *Acute Abdominal Pain in Pregnancy.* *Clin. J.*, 1913, xlii, 353.

By Surg., Gynec. & Obst.

The following conditions are considered by the author as the causes of abdominal pain in pregnancy: pyelonephritis, adhesions, extra-uterine pregnancy, simultaneous intra- and extra-uterine pregnancies, acute hydramnios, hydatidiform mole, uterine fibroid, twisting of the pedicle of an ovarian tumor, intestinal distention, pneumonia, and pleurisy. Each condition is illustrated by a case-report. Because a woman is pregnant and has acute abdominal pain, the pregnant uterus itself should not be held responsible for the suffering. Many complications of pregnancy causing acute abdominal pain are missed and the patient is condemned to much unnecessary distress, as the pain is attributed to "painful uterine contractions" and treated only with sedatives.

Pyelitis of pregnancy is rather common, the symptoms usually beginning during the second half of pregnancy. The diagnosis is made from the signs and symptoms and the disease must be differentiated from appendicitis, enteric-fever, other gastro-intestinal disturbances, and influenza, as well as from renal calculi. Pyelonephritis in pregnancy is caused most frequently by an ascending infection facilitated by a dilatation of the ureters due to pressure of the pregnant uterus at the pelvic brim. The right ureter is pressed upon more often than the left, as it lies farther from the middle line and so gets less protection from the projecting promontory of the sacrum. Infection may be also of hæmatogenous origin or transmitted by continuity from the bowels. Vaccines have given good results in conservative treatment. Interruption of pregnancy should be avoided unless both kidneys are affected and the patient's condition goes from bad to worse. An increased risk of puerperal infection is denied.

Acute abdominal pain due to adhesions is present in cases where ventrofixation has been performed. The author makes it a point to suture the uterus as low down as possible, usually at the vesico-uterine plica. He does not recommend the suturing of the posterior part of the fundus to the abdominal wall in a patient who may become pregnant again. Of 189 cases of pregnancy and labor after ventrofixation, there were three cases of uterine rupture and sixteen in which cesarean section was performed. Another complication is the possibility of intestinal strangulation, which should be prevented by occlusion of the vesico-uterine pouch by the sutures.

In extra-uterine pregnancy, the pain is due to bleeding either into the peritoneal cavity or into an encysted collection of blood. The occurrence of slight external bleeding accompanied by pain in early pregnancy must always arouse suspicion that the ovum is occupying an abnormal site. Mistakes in diagnosis in severe internal hæmorrhage due to tubal pregnancy are perforation of the appendix, perforation of a gastric or duodenal ulcer, or twisting of the pedicle of an ovarian tumor.

If hydramnios occurs in the fore or middle part of pregnancy, and not in the last two or three months, it may cause acute symptoms such as severe pain and uncontrollable vomiting. It is usually found to accompany a twin pregnancy. Andrews tells of collecting 20 pints of liquor amnii in one case.

A hydatidiform mole that is large and growing rapidly may cause severe pain and often albuminuria. If intra-uterine pregnancy is accompanied by bleeding, pain, and much vomiting or albuminuria during the first half of pregnancy, a hydatiform mole should always be thought of. Albuminuria of pregnancy is so rare before the sixth month that it should arouse suspicion that the pregnancy is abnormal. The size of the uterus is usually further advanced than would be accounted for by the period of amenorrhœa and no evidence of the presence of the fœtus can be obtained.

Acute abdominal pain due to fibroids may be caused during pregnancy, either by degeneration or incarceration of the tumor. If the latter becomes painful, degeneration should be suspected. One is loath to operate on fibroids during pregnancy because the increased vascularity may make myomectomy impossible and render hysterectomy necessary, and also because myomectomy may be followed by miscarriage or premature labor. Rest and sedatives often enable a patient with tender, painful fibroids to go on to full time. If an operation is rendered necessary by acute pain during pregnancy, myomectomy rather than hysterectomy should be performed whenever possible.

Torsion of the pedicle of an ovarian tumor occurs fairly frequently during pregnancy. The onset of the pain is usually sudden and accompanied by fainting and vomiting. The abdominal wall is tender and tense; intestinal distention occurs soon after twisting. Operative interference is indicated.

Intestinal distention during the latter months of pregnancy is alarming on account of the added distention of an already filled abdominal cavity. Usually it is due to constipation, and is relieved by enemata and catharsis. Appendicitis, pyelonephritis, twisting of an ovarian tumor, and diaphragmatic pleurisy must be excluded.

Pneumonia and pleurisy are rare in pregnant women, probably because of an added immunity. The distress caused by impeded movements of the diaphragm may be very severe. Premature labor frequently comes on spontaneously.

HENRY SCHMITZ.

Falk, E.: The Treatment of Extra-Uterine Pregnancy (Zur Therapie der Extrauterin gravidität). *Arch. f. Gynäk.*, 1913, xcix, 638.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author treated surgically eighty-four cases of extra-uterine pregnancy, three of them by incision of an infected hæmatocele, ten by removal of the tubal sac by an anterior colpoceliotomy, and seventy-one by a laparotomy. Thirty-five were emergency operations. Three patients died, making the mortality 3.6 per cent. In spite of these favorable results, Falk is of the opinion that a diffuse hæmatocele of moderate size resulting from a tubal abortion in the fifth, sixth or seventh week, and without continuous hæmorrhage, severe disturbances, an isolated tubal tumor, and any demonstrable growth, does not necessitate an operation. A number of such cases he treated expectantly, keeping the patient under observation continually, and did not have a single death. Moreover, the patients did not experience any lasting injury to their health. In almost every case the hæmatocele was absorbed within a few months, and in some cases pregnancy occurred again.

Falk admits that it is difficult to differentiate between a diffuse hæmorrhage encapsulated in the cul-de-sac and an advanced ectopic pregnancy with a blood mass. Of the three deaths, one was a case which was treated expectantly at first but which later necessitated an emergency operation. Surgical treatment is indicated only under the following conditions: (1) If an intact extra-uterine pregnancy is recognized; (2) if the patient's life is endangered on account of hæmorrhage; and (3) if an isolated tubal tumor can be demonstrated next to the hæmatocele.

The author urges great rapidity in operating. He, himself, prefers the abdominal route, avoids the elevated pelvis position, and attempts a careful toilet of the abdominal cavity, as the irritation of the peritoneum caused by the presence of the blood produces an elevation of the temperature. One third of his cases had temperatures before the operation. In one case of rupture of a tumor containing fluid blood, he noted also toxic acute atrophy of the liver.

KREBS.

Hartmann, I. P.: Tubal Pregnancy (Beiträge zur Klinik der tubaren Schwangerschaft). *Nord. med. Ark.*, 1913, Kir. Sez., xlv, 1.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

A clinical report of 93 cases of tubal pregnancy treated from 1898 to 1910, showed nothing particularly new. Laparotomy was performed in 66 cases; in 16 the operation was by the vaginal route. Since

1905 the abdominal route has been used exclusively. In 40 per cent of the cases where operation was performed on one side only, pregnancy occurred afterwards. The other adnexæ should be left in place if their consideration justifies it at all. BIENENFELD.

Ward, C.: Case of Prolonged Gestation, Double Uterus, Tubal Abdominal Pregnancy. *Transvaal M. J.*, 1913, viii, 289.

By Surg., Gynec. & Obst.

The author reports a case of tubal abdominal pregnancy from which a perfectly formed dead foetus, weighing about 8 lbs., was removed. The diagnosis was made after dilating the cervix. Exploration of the uterus showed that it was double and that the right half, which corresponded to the tubal pregnancy, contained decidua, while the left half was smooth. The duration of pregnancy in this case was estimated to be 308 days.

On opening the abdomen the head presented, and the child appeared to be free in the abdominal cavity with no sac or collection of fluid. The placenta was attached to everything it could reach and was detached with difficulty. It was necessary to stitch the intestine for two inches. The uterus was double and about the size of a uterus a week or two after delivery. The left appendage was normal. The right tube was enlarged to about the size of a thumb in thickness, and about in the center of the ampulla, rather to the uterine side and behind, was a thick swollen-edged aperture which he thinks was the original rupture.

C. H. DAVIS.

Smith, R. R.: Intra-Uterine Fracture. *Surg., Gynec. & Obst.*, 1913, xvii, 355.

By Surg., Gynec. & Obst.

Smith reports a case of true intra-uterine fracture, giving X-ray plates and photographs. The mother fell through a porch two months before delivery. The child was born with a united fracture of the tibia and fibula. This was corrected about three weeks afterwards by open operation.

Intra-uterine fractures are divided into four groups as follows:

(1) Intrapartum fractures, occurring usually during artificial delivery.

(2) Fractures depending upon disease of the foetus, the fracture being incidental; chondrodysplasia, osteogenesis imperfecta, and syphilis.

(3) Certain deformities, usually of the leg, formerly commonly classed as intra-uterine fractures, but now proven otherwise. The author discusses the various theories as to their origin, and concurs in the view of Mall that they are due to faulty implantation of the ovum.

(4) True intra-uterine fractures, occurring in healthy individuals and resulting from violence.

From the literature Smith has collected forty-two cases of the last named group. Some of these he believes are doubtful. The fractures may occur without abortion or serious injury to the mother. More than one fracture sometimes occurs in one

fœtus. In all, there were twelve fractures of the clavicle, eleven of the skull, eleven of the leg, four of the forearm, four of the humerus, three of the femur, and one of the scapula. It is well to know that such true uterine fractures, though rare, may occur, in order that we may be able to distinguish them from the other fractures or deformities seen at birth.

Paddock, C. E.: Pregnancy Complicated by Appendicitis. *Am. J. Obst.*, N. Y., 1913, lxxiii, 429.
By Surg., Gynec. & Obst.

In appendicitis during pregnancy the uterus helps wall off the infected zone and in case of an abscess forms a part of the abscess wall. The fever and the irritation produced by the inflammatory reaction set up uterine contractions so that a large percentage of acute cases abort. The consequent contraction and retraction of the uterus tears adhesions or may actually remove one of the walls of an abscess and cause a generalization of the peritonitis. In this way appendicitis is more serious in the gravid than in the non-gravid state. The necessity for an early diagnosis is consequently urgent. Though occasional cases may recover without operation, the termination of a given case is even more dubious than in the non-pregnant state. Every case is to be operated upon regardless of the period of gestation. Cases occurring during the puerperium pursue the course of appendicitis ordinarily. The altered position of the appendix in pregnancy may cause some difficulty in the diagnosis. The most frequent condition mistaken for appendicitis during pregnancy is right-sided pyelitis. This affection may so nearly simulate appendicitis and is so frequent, that Paddock especially emphasizes the necessity of considering this possibility in every suspicious case of appendicitis, more especially during pregnancy.

N. SPROAT HEANEY.

Heinsius, F.: Cystic Kidneys and Pregnancy (Cystennieren und Gravidität). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxiii, 429.
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

A short review is given of the meager literature concerning this subject and a case, observed by the author, is described in detail. The patient, a primipara, thirty-nine years of age, was confined four years ago. Since labor she suffered pains in both sides and a ptosis of both kidneys. At the seventh month of pregnancy she complained of severe pains in the right side, and had hæmaturia, grave toxæmic symptoms, such as headache, vomiting, disturbed vision, and albuminuria, and signs of cardiac failure. She improved temporarily following a premature labor induced by a vaginal cæsarean section. On the tenth day post-partum she developed a pyelitis. On the thirteenth day, a right nephrectomy was performed but the patient died eighteen hours later. A post-mortem examination revealed bilateral cystic kidneys. The right kidney was the size of a child's head and had an abscess. The liver was permeated

with innumerable cysts of a bluish color and varying from the size of a pinhead to that of a pea.

The diagnostic points are the presence of irregularly shaped renal tumors in both sides, pains in the regions of the kidneys, transient hæmaturia with signs of chronic nephritis, a similar disease of the liver, and malformations of the genitalia. The treatment must be as conservative as possible. Conception should be avoided as the condition grows worse during pregnancy. The latter should be interrupted. Nephrectomy should be performed only as a last resort, as one third of the cases die following this operation. If possible, the treatment should consist of nephrotomy and drainage, though two patients thus treated died immediately, and one six months afterwards from uræmia. VASSMER.

Chenhall, W. T.: Uterine Myomata Complicating Pregnancy. *Australas. M. Gaz.*, 1913, xxxiv, 122.
By Surg., Gynec. & Obst.

The writer dwells on the diagnosis of pregnancy in a myomatous uterus and reports two such cases with successful myomectomies during gestation and subsequent full-term deliveries with normal labors. The difficulties of diagnosing pregnancy are greatly increased by the added enlargement and distortion of the organ produced by one or more tumors. It is of considerable importance that early diagnosis should be made. A primipara, 24 years old, was in the third month of pregnancy when she became alarmed by a swelling which was appearing in the right side of the abdomen and beginning to cause pain. A pregnant uterus was easily defined with a tumor projecting from its wall. The tumor, larger than the uterus, was round, smooth, soft, easily movable, and slightly tender on palpation. An immediate operation was advised because of the rapid growth and increasing softness. The tumor was enucleated. The muscular layer of the uterine wall was brought together by a Halsted suture of catgut, the peritoneum being carefully united and then reinforced by a continuous Lembert suture. Recovery was quite uninterrupted and abortion prevented by a free use of morphine during the first five days. Spontaneous delivery at term occurred after twelve hours of labor. The other patient was a bi-para, 26 years old. At about the fourth month of gestation, she noticed a peculiar swelling with bladder distress, amounting to increased frequency of and some pain during micturition. The swelling was diagnosed as a subserous myoma in close connection with the cervix. It was firm, hard, and tender. As the patient contemplated early return to her home in the country, where facilities for proper treatment were limited, in case of complications, immediate removal of the myoma was advised. This was successfully done, its bed being closed as in the other case. Recovery was uneventful, with morphine given during the first five days *post operationem*. The patient went home four weeks later and was delivered at full term without attendance by a doctor. SCHMITZ.

Trethowan, W.: Uterine Fibroids and Pregnancy. *Australas. M. Gaz.*, 1913, xxxiv, 119.
By Surg., Gynec. & Obst.

The author discusses the indications for treatment and gives several case reports. The condition is not very common and usually causes very little harm. Occasionally, however, the woman's life is in extreme peril. Each case must be considered on its merits and treated accordingly. Women with fibroids may become pregnant, and pregnancy, delivery, and the puerperium will be normal. If pregnancy occurs with fairly large submucous or intramural fibroids involving most of the fundus, operation should be urged, as abortion is practically certain. The points in favor of operation in nearly all cases are as follows: (1) Most of the tumors require operation sooner or later. (2) The danger is increased by pregnancy. (3) The mortality from operation is low and should not exceed 5 per cent. The reasons against operation are: (1) The danger of pregnancy in these cases is not very great. (2) In a large majority of these cases gestation is followed by normal delivery and puerperium. (3) It is harsh treatment to condemn a woman to sterility before she has had a chance to bear a child to term.

HENRY SCHMITZ.

Lynch, F. W.: Fibroid Tumors Complicating Pregnancy and Labor. *Am. J. Obst.*, N. Y., 1913, lxviii, 429.
By Surg., Gynec. & Obst.

Lynch has, in this careful article, given a complete history of the subject and has considered in a comprehensive way the various effects of pregnancy on the tumor and the tumor on the pregnancy. He has analyzed a large number of the reports of operations for this condition in a critical way, and concludes that if indications were present for operation the majority of the case reports failed to show it. The mere presence of a tumor of the pregnant uterus is not an indication for operation. The symptoms must be of sufficient present gravity to justify an operation which has, as its greatest probability, the sacrifice of not only the existent pregnancy but all future pregnancies also. The greatest percentage of cases run approximately a normal course during pregnancy and labor. Obstruction of the pelvis, even in cases of large fibroids, is rarely noted. When, however, obstruction is present cesarean section is indicated before there has been much manipulation, and the uterus treated according to the extent of the disease, hysterectomy usually being necessary. Early interference is advisable in cases presenting multiple growths and infectious processes during the puerperium. As a rule, hysterectomy is indicated as soon as the growth is known to be infected.

N. SPROAT HEANEY.

Norris, C. R.: Ovarian Neoplasms Complicating Pregnancy and Labor. *Am. J. Obst.*, N. Y., 1913, lxviii, 429.
By Surg., Gynec. & Obst.

Serious complications, either during pregnancy, labor, or the puerperium, may be expected in 25 to

30 per cent of all cases, and from 16 to 20 per cent of the pregnancies will terminate prematurely. Comparing operation to expectant treatment, Norris finds that expectant treatment of an ovarian tumor, discovered during pregnancy, carries a danger to the mother three times as great as that of early operation. If operative interference occurs prior to the fifth month of pregnancy, the chances of saving the fetus are three times as great as those of expectant treatment. An ovarian tumor, whether abdominal or pelvic in situation, recognized prior to the first half of pregnancy, should always be removed without delay, except when cardiac, kidney, or other grave systemic condition contraindicates a general anæsthetic. In such cases as promise obstetrical complications, the use of local or nitrous oxide and oxygen or spinal anæsthesia is justified. The abdominal route is always to be preferred since the vaginal route shows a larger number of abortions.

The frequency of accidents to tumors situated in the abdominal cavity, and the relative ease with which they may be removed without disturbing the uterus and without inducing premature labor, justify their immediate removal at any period of pregnancy. In the interest of the child, pelvic bound tumors, first discovered after the middle of pregnancy, should be under continuous observation, and so long as there are no symptoms of danger, their removal may be delayed until just before term, with the expectation of securing a living child at that time.

An abdominal tumor, if not a mechanical obstacle, may be guarded against its greatest danger during labor, namely, rupture, by early and skilful obstetric interference. The patient having been delivered safely, the tumor should be removed during the puerperium upon the slightest evidence of torsion or inflammatory reaction. Tumors obstructing the birth canal call for early and definite surgical treatment. Attempts at reposition should only be made by an experienced man and then only when prepared to perform an immediate abdominal operation. The best treatment for an ovarian tumor obstructing the birth canal is abdominal ovariectomy. In clean cases, the removal of the tumor is advised, preceded by a classic cesarean section. If in doubt as to the patient's chances from infection of the uterus, that organ is then to be removed supravaginally and the stump anchored extraperitoneally in the incision.

N. SPROAT HEANEY.

Sellheim, H.: Artificial Interruption of Pregnancy and Sterilization in One Session by the Abdominal Route (Schwangerschafts Unterbrechung und Sterilization in einer Sitzung auf abdominalem Wege). *Monatschr. f. Geburtsh. u. Gynäk.*, 1913, xxxviii, 166.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

When the artificial interruption of pregnancy and sterilization is necessary, it may be accomplished either in one or two sessions. It is more desirable,

however, that it be done in one operation, as in this way, the necessity for two anæsthetics is avoided. The author's method of choice is laparotomy, which consists in opening the abdomen and uterus, removing the products of conception, cleansing the uterine wall, and resecting the tubes. The uterine and abdominal wounds are then closed. The advantage of this method lies in the short duration of the operation, the prompt evacuation of the uterus, and in the certain prevention of conception in the future.

WEBER.

Essen-Möller, E.: The Treatment of Hæmorrhage from the Placental Site, Placenta Prævia, and Accidental Hæmorrhage, in the Later Months of Pregnancy. *Tr. Internat. Cong. Med.*, Lond., 1913, Aug. By Surg., Gynec. & Obst.

The discussion is limited more particularly to accidental hæmorrhage. A table giving a detailed summary of 29 cases is appended. The conclusions drawn are as follows:

1. There are two genetically different forms of accidental hæmorrhage. One is caused by a trauma and the other by an intoxication of the same kind as that which causes albuminuria, eclampsia, and eclampsism.

2. The inflammatory and degenerative alterations which are sometimes observed in the placenta, the decidua, and the uterine wall, are not characteristic of accidental hæmorrhage and may occur under other circumstances as well.

3. The extensive bleedings in the uterus (apoplexie utéro-placentaire) observed by Couvelaire and other authors are probably characteristic of the "eclamptic" form of accidental hæmorrhage.

4. It is possible by rational treatment to reduce mortality of mothers considerably.

5. The common "obstetrical" treatment should be employed in the beginning cases of accidental hæmorrhage.

6. The plugging of the vagina may be of value in some cases, but the author has no confidence in it.

7. The value of rupturing the membranes can be estimated only after trying it in special cases. In many instances it is sufficient, and for the other cases it does not prevent later operations.

8. Exceptionally, in severe cases, with closed cervix, the cæsarean section is the safest and quickest method of removing danger.

9. It is not necessary to remove the uterus, except in cases where it does not contract and the bleeding still continues after the removal of the ovum.

CAREY CULBERTSON.

Stroganoff, W.: Remarks Relative to Freund's Article "On Eclampsia and Its Treatment on the Basis of 551 Cases" (Einige Bemerkungen über den Artikel von Prof. Freund, "Über Eklampsie und ihre Behandlung auf Grund von 551 Fällen"). *Arch. f. Gynäk.*, 1913, xcix, 448.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Stroganoff details his views as to the treatment of eclampsia and criticises the views and statistics

given by Freund in favor of the active therapy. The most important points are these:

1. Infant mortality. Freund entirely disregards 24 perforations without mentioning whether they were performed on living or dead children. He includes all the cases of puerperal eclampsia, and finally he speaks only of stillborn children, excluding all those who died during the first days or week of the puerperium as a result of the operative interference. In reality, therefore, his infant mortality averages 21.4 per cent and not 11.5 per cent, as stated by Freund, as compared to Stroganoff's own mortality of 12.2 per cent with conservative treatment. 2. Zweifel reports 35 cases, and not 25, as stated by Freund, of combined treatment with venesection and Stroganoff's method also. He does not state whether in all cases of primary venesection Stroganoff's treatment was employed also. 3. The author decidedly denies that the prophylactic treatment is inconvenient, basing his declaration upon his own experience, which included nearly 100 cases. The operative mortality at the Charité is high (121:21 = 17 per cent, of which 4.13 per cent can be positively attributed to the operation itself). 5. Freund considers the narcotic therapy unreliable, yet employs pantopon himself during transportation of the patient. 6. Bumm's results with the prophylactic method are not conclusive, as only 16 cases were treated. 7. The author does not consider it correct to speak of a "narcotic therapy," as the decrease in total symptoms and increase of the urine and the disappearance of the coma surely are not narcosis. 8. When an irritability is spoken of as the cause of eclampsia, then a therapy which does away with this irritability ought to be the rational one. Freund speaks of the increased irritability, yet considers the Stroganoff method as the most irrational. 9. The demand of Freund to deliver the woman, at the latest, one hour after the first convulsion is nearly impossible, as quite frequently the first attack is seen only by the midwife. Therefore cases in which the convulsions are due to other causes may be forcibly delivered, as cases of eclampsia aid and further may deliver a patient, who perhaps, as is often the case, has had only a single convulsion; in the hurry of delivery asepsis may suffer.

The author gives statistics showing that the maternal and infant mortality with the prophylactic treatment is just one-half of that where operative treatment is employed.

In conclusion, the author states that Freund bases his statement upon assumptions and neglects the facts, and he cites also the results of other authors, as Roth-Leopold, Kapferer-Krönig, Zoepfritz and Zweifel.

SIEFART.

Good, F. L.: Cæsarean Section; Its Indication; Report of Twenty Cases. *Boston M. & S. J.*, 1913, clxix, 345.

By Surg., Gynec. & Obst.

Cæsarean section was performed by the following relative indications:

Intramural fibroid of uterus in a primipara....	1
Primiparous placenta prævia	1
Primiparous antepartum hæmorrhage	1
Threatened eclampsia in a primipara	1
Primiparous prolapsed cord	1
Primiparous transverse presentation.....	2
Primiparous breech presentation.....	2
Arm presenting in front of head in primipara..	1
Primiparous O. D. P.	1
Twin pregnancy.....	1
Old primipara.....	1
Labor complicated by previous ventral suspension.....	1

14

The six remaining cases comprised V-para, each of whom had been delivered of a stillborn baby following either a hard forceps or version delivery, two of whom had a conjugate diameter of 2¾ inches, and three, a conjugate of 3 to 3½ inches. One has had a second cesarean section.

The author gives a brief history of each case explaining his relative indication. He believes that the cesarean cicatrix is no more susceptible to rupture than normal uterine muscle. C. H. DAVIS.

Heinricius, G.: Cesarean Section in a 47-Year-Old Primipara (Kaiserschnitt an einer 47-jährigen Erstgebärenden). *Finska Läk.-sällsk. Handl.*, Helsingfors., 1913, ix, 762.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In the case cited by the author, the last menstruation occurred about five weeks after marriage, the first foetal movement being noticed five months later. The woman was 47 years old, the husband 70 years old. Labor pains began at the normal time; the discharge of the amniotic fluid, one and a half hours earlier. The true conjugate was 8.5 cm. The patient wanted a living child, but as the pelvis was narrow, and the mouth of the uterus after a day and a half of severe pains would open only enough to admit one finger, the vaginal wall was rigid, and the cervical walls hard and unyielding, and as the patient showed no symptoms of infection, cesarean section was performed two days after the beginning of pains. The method preferred in the hospital, that of incising the lower uterine segment, was carried out. The child weighed 3100 gms. Recovery was uneventful. This is the twenty-sixth case of cesarean section with incision in the lower segment of the uterus performed in the hospital. BJÖRKENHEIM.

Patek, R.: Strength of Peritoneum and Uterine Sutures After Cesarean Section; Reported by the Patient Herself (Ein Beitrag zur Widerstandskraft des Peritoneums und der Uterusnaht nach Sectio cesarea; von Patientin selbst ausgeführt). *Zentralbl. f. Gynäk.*, 1913, xxxvii, 1105.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In 1909, a patient was admitted to the hospital in Vienna in an unconscious state, with an incised wound 15 cm. long in the midline of the abdomen, from which coils of the intestine protruded. The

intestines were not injured, but there was serous fluid in the abdominal cavity, and the uterus, as large as a child's head, was opened throughout its entire length. The uterine walls were sutured with silk, and a drain inserted; drain removed the third day. An abscess of the abdominal wall developed, also infiltration of the parametrium on the right. The fever lasted 6 weeks and the patient was dismissed eight weeks after the operation. On the day when the birth was expected the patient, who had had no pains, cut herself with one powerful stroke of a razor, severing the abdominal wall and the uterus. She said she felt no pain. She answered a question and fell unconscious. The child was drowned in the vessel on which she sat. In 1912, she became pregnant again. In the lower third of the scar a hernia developed and gradually became larger. The birth occurred at normal time. Soon after labor commenced, the pains became feeble and extract of hypophysis and secacornin were administered. The birth was spontaneous, followed in 15 minutes by the spontaneous delivery of the placenta. No hæmorrhage occurred and no unusual pain.

HOFSTATTER.

Scipiades, E.: Hebosteotomy and Preperitoneal Cesarean Section (Hebosteotomie und präperitonealer Kaiserschnitt). *Abhandl. a. d. Geb. d. Geburtsh. u. Gynäk.*, 1913, ii, 576.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author compares the results obtained with the preperitoneal cesarean section to those of hebosteotomy on his own material. *Hebosteotomy*. The maternal mortality of the operation is not greater, but the injuries resulting, the morbidity, the duration of the puerperium, and the permanent injuries are greater. Injuries to the bladder are best avoided by the Döderlein method; those resulting from the sudden giving of the pelvis, by the Walcher position and by reinforcing the trochanters. In severe grades of contracted pelvis, in marked disproportion of the head and inlet, and in rigid external genitalia, hebosteotomy is to be avoided. In the presence of marked varicosities hæmorrhage is to be expected, and it is advisable to operate on the other side. In 14 cases a hæmatoma formed six times.

All patients operated upon 12 hours after rupture of the membranes, or in the presence of temperature up to 37.5° C. had fever during the puerperium. Of the children, 86 per cent survived, the causes of foetal death being trauma to the head by the bony edges of the pelvis, asphyxia, and intrauterine death. The late results in 11 cases were: One woman, after suffering and limping severely, died six years later from renal disease, the bladder fistula having closed after two years; one died two years after from septicæmia, 9 women are healthy. Five women became pregnant eight times subsequently. The ends of the bones have become mobilized in all but one instance.

The conditions necessary for hebosteotomy are: In multiparæ, absence of infection, intactness of the

lower segment, absence of varicosities, good soft parts, and if possible no attempts at high forceps extraction. The sacro-iliac joint should be protected, no drainage employed and a fixing bandage should be applied. In regard to the operations performed in the interest of the mother, preperitoneal cesarean section showed only a greater morbidity. The relation between the foetal head and the size of the pelvis must be determined from the nature of the uterine contractions, as version could be performed twice by the author as against one operation in the presence of intact membranes with a conjugata vera under 8 cm. Once there were signs of thinning of the lower uterine segment with only one finger dilatation. Latzo's method with a longitudinal incision should be used, as the Pfannenstiel incision does not increase the space. The procedure is easier if the bladder is filled, but it should be emptied before the peritoneal reflection is loosened and brought out of the way. To prevent peritoneal tears a careful longitudinal incision should be made, while blunt dissection and care must be exercised when the peritoneum is reflected. Filling of the bladder and elevated pelvis position will obviate the necessity of loosening the peritoneum too high. The excellent convalescence is due to the fact that the bowels are not exposed and that the uterine incision is low down.

Drainage if necessary should be carried out through the vagina. Three subsequent pregnancies in these women were terminated by cesarean section, later accompanied by tubal sterilization.

MOHR.

Scherer, A.: The Value of Bacteriological Examinations in the Treatment of Abortion (Lehet-e irányadó a bakteriologiai vizsgálat a vetélések kezelésében). *Orvosi Hetilap*, Budapest, 1913, lvii, 337.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author made bacteriological examinations of the lochia of sixty cases of afebrile abortions and obtained the following results: Hæmolytic streptococci were found in eight cases, non-hæmolytic streptococci in sixteen, staphylococci in twenty, colon bacilli in two, pseudo-diphtheria bacilli, in one, and various other bacteria in four. In nine cases the lochia were sterile.

Winter's method of treatment is not acceptable in general practice because (1) the results of the bacteriological examination do not give a positive indication; (2) in most cases the physician is called on account of profuse hæmorrhages and he cannot therefore postpone the treatment for the two or three days that are necessary to obtain a result from such an examination; (3) the duration of treatment is materially lengthened; and (4) the entire procedure is too complicated for practical purposes.

The treatment of cases with hæmolytic streptococci and their control by means of repeated vaccinations cannot be carried out by the general practitioner.

FRIGYESI.

LABOR AND ITS COMPLICATIONS

Kemp, D. C.: Ovarian Cyst Exposed per Vaginam During Delivery by a Midwife. *Lancet*, Lond., 1913, clxxxv, 865.

By Surg., Gynec. & Obst.

The author gives a brief history of a Tamil Mohammedan woman, aged 20, in whom an ovarian cyst which weighted 1 lb. 10 ozs. escaped through a rent in the posterior fornix to the left of the cervix. The intestine was pulled out, during the examination made, to determine the nature of the tumor. The patient recovered following the removal of the tumor.

C. H. DAVIS.

Kröner, M.: Birth in Cases of Occipital and Dorsal Meningocele (Über den Geburtsverlauf bei occipitalen und dorsalen Meningocelen). *Beitr. z. Geburtsh. u. Gynäk.*, 1913, xviii, 363.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author cites cases collected from the literature and two of his own at the Rostock University Clinic, and points out that occipital and dorsal meningocele is not only a serious complication in labor, but that it is an important factor in causing facial and frontal presentations.

HOHL.

PUERPERIUM AND ITS COMPLICATIONS

Von Reding, A.: An Unusual Case of Diffuse Necrosis of the Puerperal Uterus (Ein ungewöhnlicher Fall ausgedehnter Nekrose des puerperalen Uterus). *Cor.-bl. f. Schweiz. Ärzte*, 1913, xliii, 651.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Von Reding reports the case of a patient in whom he removed the placenta by Crédé's method one hour after labor. The patient had a severe hæmorrhage, and became almost pulseless and very anæmic. She recovered, however, but eight days after labor an internal examination was made on account of high fever and a putrid discharge. The parametria were negative. The uterus was the size of a child's head, hard, movable, and not tender to pressure. The cervical canal was about one and a half inch in diameter and a mass was felt above the internal os which entirely filled the uterine cavity. This was firm in consistency, had an uneven surface, and was intimately adherent to the uterus. An abdominal total extirpation was performed eleven days postpartum. The patient died almost immediately after leaving the operating room.

On microscopical examination of the uterus an external firm and an internal porous division of the uterine wall could be seen. The external half was normal and not infiltrated, but the internal porous half was necrotic, with fatty degeneration of the muscle fibers and blood vessels. In spots, a purulent infiltration of the muscular layer was noted. The endometrium was completely absent. A few remnants of the placenta were found at the posterior uterine wall. So firmly were they united to the uterine tissues that they could be distinguished only by the microscope. No decidual formations were seen.

HARM.

Watkins, T. J.: Puerperal Infection; A Study of Some of the More Important Features of the Disease, with a Review of the Cases Treated During the Last Eight Years. *Am. J. Obst., N. Y.*, 1913, lxxviii, 429.
By Surg., Gynec. & Obst.

In this article, the author reports his results in the treatment of 100 cases of puerperal infection such as come to the hospital in a large city. Ninety-one patients recovered and nine died. Seven of the fatal cases were hopelessly ill with generalized peritonitis on admission. One had large multilocular abscesses, which, though incised and drained, terminated in peritonitis and death. One was a case of pyæmia with metastatic abscesses. The effect of outdoor treatment is especially emphasized. Supportive measures, good food, sleep, and elimination are the main points in the therapy.

He tersely summarizes the subject as follows:

1. Puerperal infection is essentially a systemic disease and the treatment should be chiefly general.
2. The only general treatment of established value as yet is the use of remedies to increase the body resistance and thus favor and hasten the development of systemic immunizing bodies.
3. Retained products of conception should be left to escape spontaneously, except in case of hæmorrhage, when gauze packing should be used to hasten separation of retained tissue and to stimulate uterine contractions.
4. Pelvic inflammatory exudates usually disappear by absorption. Only exceptional cases require incision and drainage.
5. Suspected cases of free pus in the abdominal cavity indicate vaginal section to determine the diagnosis and the indications for treatment.
6. The treatment which remains in quite general use is much more dangerous than the disease.

N. SPROAT HEANEY.

Gröne: Metritis Dissecans Puerperalis (Metritis Dissecans Puerperalis). *Versamml. d. Nord. chir. Vereins*, Kopenh., 1913.
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The patient was a primipara 28 years old, who was delivered spontaneously without internal examination being made. A small episiotomy had been performed, which healed normally. A few days later the patient was seized with fever and the discharge became foul. There were no subjective symptoms, but a definite anæmia was present. Twenty-two days after delivery the uterus was perforated during an intrauterine examination and was immediately extirpated. The patient recovered. Upon section the uterus showed smaller and larger areas of necrosis, which in some parts almost reached to the serosa.

Microscopically, extensive necrosis was found and the connective tissue showed extensive round-cell infiltration. No decidua or other signs of mucosa were present, and nowhere could be found cells of foetal origin. The interesting part of this case is the fact that it probably was a case of auto-infection.

S. A. GAMMELTOFT.

MISCELLANEOUS

Goldstine, M. T.: Hæmorrhage in the New-born. *Illinois M. J.*, 1913, xxiv, 170.
By Surg., Gynec. & Obst.

The author discusses the etiology and treatment of this condition, and reports a series of cases treated by injection of horse and human serum and of whole unclotted human blood.

The writer's technique for securing blood and keeping it has been as follows: A large vein is secured in the arm near the elbow, and a good sized needle inserted. The blood is allowed to flow into test tubes large enough to hold 50 cc., and with a wide mouth so that the serum can be easily withdrawn from the tube with a syringe that will hold 15 to 20 cc. of serum. One test tube has been, as a rule, a sufficient dose for one injection, and need not be used again. This protects the blood against infection that might occur if a large bottle were used and the cork removed several times. When whole blood is used, it is withdrawn with a syringe and quickly injected into the patient. The injections were made subcutaneously into the back just below the scapula. The following conclusions were drawn:

1. The etiology is still doubtful.
2. The use of blood-serum is a great and decided advance over the use of drugs.
3. Human serum is to be preferred to animal serum, as it does not produce any undesirable symptoms, may be used as often as necessary, and does not sensitize the patient against the administration of more serum.
4. Injection of serum is better than transfusion, as transfusion is a very difficult procedure, and one transfusion does not always stop the bleeding.

C. D. HOLMES.

Weidenbaum, G.: Prophylaxis of Blenorrhœa Neonatorum (Zur Blenorrhœoprophylaxe am Neugeborenen). *St. Petersb. med. Ztschr.*, xxxviii, 134.
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author puts forward prominently the blessing of Crédé's method in the prevention of ophthalmia neonatorum as a result of which this disease has almost entirely disappeared from institutions. In contrast to this is the fact that ophthalmo-blenorrhœa has not decreased. An investigation, ordered by Crédé-Hörder, showed that 12.39 per cent of the inmates of thirty large institutions for the blind in Germany lost their eyesight from blenorrhœa. The causes for this, according to the author, are: an increase in the spread of genital diseases; the rapid growth of large cities, etc. The silver preparations used have the disadvantage of instability. The irritations produced by the use of silver nitrate are due to its decomposition, which may be prevented by the addition of potassium nitrate. A 10 per cent solution of potassium nitrate is not irritable to the conjunctiva. Weidenbaum recommends a tablet of 0.1 silver nitrate and 0.1 pot. nitrate, which is easily soluble in water.

JAEGER.

Opitz: May a Mother's Milk be Injurious to Her Own Offspring (Kann die Milch der eigenen Mutter für den Säugling schädlich sein)? *Deutscher Gesellsch. f. Gynäk.*, Halle, 1913, May.
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author is of the opinion that the milk of a woman who is suffering from nephritis may undergo certain changes that will render it injurious to the child. This is easily conceivable in the light of Abderhalden's views on metabolism. In a case of the kind referred to, such changes could not be proven, but close observation of the child convinced the author that the milk was injurious. Sudden changes of temperature in the new-born as described by Krömer are relatively common. The inanition fever described by pediatricians is not commonly observed in the early loss of weight of these infants, but rises of temperature due to some disturbance are frequent. Mother's milk, however, is but rarely the cause. It has taken considerable time to convince the profession and the laity that nothing can take the place of mother's milk, and too much stress laid upon isolated cases in which it is injurious may cause much harm.

Bacon, C. S.: The Essentials of Sanitarium Treatment of Tuberculous Gravidæ and Puerperæ and Their Children. *J. Am. M. Ass.*, 1913, lxi, 750.
By Surg., Gynec. & Obst.

In the United States about 32,000 tuberculous women are pregnant every year, and between 44,000 and 48,000 women of child-bearing age die of tuberculosis. About one third of the tuberculous pregnant women die within a year of their labor. Of 10,000 children under five years who die of tuberculosis every year, three fourths are born of tuberculous mothers. These data show a part, but not all, of the bearing of pregnancy upon the tuberculosis problem.

Gravidæ and puerperæ constitute an important factor in keeping alive the germ of tuberculosis and preventing the eradication of the disease, and this fact has not been recognized sufficiently in the past. The proper management of these cases is that which carries the woman through labor and the lying-in period, leaving her, in from two to four months later, in as good condition as she would have been had she not been pregnant, and presents the child at that time to its parents and society uninfected. This necessitates a close watch of pregnancy, the conservation of the strength of the patient, and, if necessary, timely interference. It means the most skillful conduct of labor so that the patient will pass through it with no unnecessary loss of blood or strength and with no risk of infection. It means a supervision of the puerperium to prevent, as far as possible, the exacerbation of the disease so common at this time. It means the separation of the child from the mother and the care of it as long as necessary. A very important feature of the management thus outlined is the educating of the mother and her relatives.

The obstetrical management above outlined can be carried out in a private house only with considerable difficulty. The labor can be conducted better in a maternity hospital. The conduct of the latter part of pregnancy and a long puerperium, however, cannot be provided in such a hospital, and there is need, therefore, of a maternity department in the tuberculosis sanitarium.

The author gives a plan for a maternity ward and discusses the management in detail. At a later date he hopes to describe its workings and the results obtained.
EDWARD L. CORNELL.

Von Gutfeld, F.: The Influence of Physical and Social Conditions of Mothers on the Size of Their Progeny (Über den Einfluss körperlicher und sozialer Verhältnisse der Mütter auf die Körpermasse ihrer Neugeborenen). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxiii, 266.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author's investigation took 5,000 normal cases into consideration, and the factors involve: (a) Maternally — age, number of pregnancies, occupation, social state, position in utero; (b) infantile — length, weight, greatest circumference of skull.

The conclusions arrived at are: 1. Mothers of the same age give birth to boys that are larger in every way than girls. 2. Very young mothers can give birth to average-sized infants. 3. Mothers from 28 to 35 years of age give birth to the largest children. 4. Children of servants are larger than those of factory girls, the former standing higher socially. 5. Length, weight, and size of the head are in proportion to the length of the mother's body. 6. Of children born dead, boys are larger than girls. 7. A child with a good initial weight has brighter prospects than one underweight.
GRAEUPNER.

Goldberger, M. F.: The Relation of the Cervix to Sterility and Pregnancy. *Internat. J. Surg.*, 1913, xxvi, 269.
By Surg., Gynec. & Obst.

The causes of sterility are taken up first and then the various operative procedures on the cervix uteri. The author formulates his conclusions as follows:

1. The diseased or abnormal cervix is one of the most frequent causes of sterility in the female.
2. When sterility is due to antelexion it is best corrected by the Dudley operation.
3. The dysmenorrhœa is relieved in most cases following this operation and pregnancy occurs in 40 per cent of the cases.
4. Lacerations of the cervix should not be interfered with unless they cause definite symptoms, and then amputation seems to give the best results.
5. Erosions and ulcerations of the cervix not yielding readily to local medicinal treatment call for amputation.
6. If dysmenorrhœa and leucorrhœa be present in these cases, amputation of the cervix will relieve the pain and stop the discharge in about 80 per cent of the cases.

7. Labor seems to be rendered more difficult and prolonged in the cases following trachelorrhaphy and to be made easier and shortened after amputation.

8. Conception is just as frequent following amputation of the cervix as before.

Engelhorn, E.: The Modification of the Hæmoglobin Catalysor During Pregnancy; the Weichardt Reaction (Über die Beeinflussung des Hämoglobinkatalysators in der Schwangerschaft; Weichardtsche Reaktion). *München. med. Wchnschr.*, 1913, lx, 1105.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Using Weichardt's method for determining the difference in the catalyzing power of blood in pregnancy and in the non-pregnant state, the author finds that the titration figures for the former were higher than those for the latter. His observations were obtained from 108 cases. A case of eclampsia described is very interesting. At the beginning of the attack the titer was higher than that of the non-pregnant state (305:205). As to whether in severe eclampsia there is an inhibition of the catalyzing power of the blood has yet to be determined. Normally the catalyzing power of the blood is increased in pregnancy.

GRAEUPNER.

Veit, J.: The Serum Diagnosis of Pregnancy (Die Serodiagnostik der Gravidität). *Berl. klin. Wchnschr.*, 1913, l, 1241.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Veit is entitled to a place in the development of the Abderhalden reaction, for it is he who suggested the migration of placental elements into the maternal blood. He substantiated Abderhalden's observation, even for early cases of pregnancy, and considers the reaction a valuable diagnostic aid. The reaction has a placental origin; the ovum need not be alive nor even present — all that must be present is living placental tissue. The reaction with cobra-toxin and of precipitins is quite analogous, and it is positive in animals in which the chorionic villi are not immersed in the maternal blood. Here the chemical elements of the chorion epithelium pass through the lymphatic into the maternal circulation.

SEMON.

Schiff, E.: Is Abderhalden's Dialization Method of Use in Differential Diagnosis? (Ist das Abderhaldensche Dialysierverfahren differential-diagnostisch verwertbar?) *Deutsche Gesellsch. f. Gynäk.*, Halle, 1913, May.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Abderhalden's dialization method is of special importance in differential diagnosis. Forty-nine cases of which the clinical diagnosis was not known were examined by it. They comprised early and advanced pregnancies, climacterium, genital tumors, adnexal disease, eclampsia, abortion, puerperium, etc. The reaction was always positive in pregnancy and always negative in the non-pregnant cases with the exception of two cases in which

the sera were not in a good condition because of hemolysis or prolonged exposure to the temperature of the room. In twelve cases the behavior of pregnancy serum towards carcinomatous tissue was investigated. In all of them the reaction was negative.

Heaney, N. S., and Davis, C. H.: Abderhalden's Test of Pregnancy. *Am. J. Obst.*, N. Y., 1913, lxviii, 429.

By Surg., Gynec. & Obst.

In this article is given the experience upon which the test is based, the technique of the performance of the test, a résumé of the literature, and the results of the authors' experiments.

Twenty-eight individuals were tested by the dialysis method, 17 according to the latest technique. Of the 17, 5 were healthy non-pregnant individuals, one of whom reacted positively. Of 7 pregnant women, 2 failed to react. Of 5 puerperal women, 2 were from the late puerperium and reacted negatively; the others were early and were positive.

The authors also tested the digestive action of a series of pregnant and non-pregnant sera upon Wittepeptone solution and placental suspension. Serum was mixed with the peptone solution or placental suspension, under sterile precautions, and, after incubation, an increase in amino-acids was tested for by the formalin method of Sorensen-Ronchesi. No digestive action could be demonstrated when placental suspension was used, though the sera came from pregnant patients. When peptone solution was used a variation in the peptolytic activity of the various sera was demonstrated, though this variation was not dependent upon the gravid or non-gravid state of the patient.

Lichtenstein: Abderhalden's Serum Reaction (Zur Serumreaktion nach Abderhalden). *München. med. Wchnschr.*, 1913, lx, 1427.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Lichtenstein finds the dialysis method satisfactory. He examined the sera of 42 cases of pregnancy, including 6 tubal pregnancies and 4 eclampsias, and 34 cases of non-pregnancy. Three tests were improperly made and are therefore excluded. The reaction disappears during the third week of the puerperium. All cases of non-pregnancy gave negative results. Umbilical blood and spinal fluid failed to reduce placental or eclamptic placental tissue. Eclamptic serum reduced eclamptic and normal placental tissue very rapidly. The action of normal serum was not very different from that of nephritis in pregnancy, when reacting on normal or eclamptic placenta. The amniotic fluid of the non-eclamptic and ascitic fluid from the non-pregnant gave negative reactions. In spite of the exactness of the reaction, one should not be governed solely by it in making a diagnosis. The author's observations substantiate Abderhalden's claim that it is not necessary to have a flood of chorionic villi in the maternal circulation to get a positive reaction.

GRAEUPNER.

Mayer, A.: The Therapeutic Use of the Normal Serum of Pregnancy (Über die therapeutische Anwendung von normalen Schwangerenserum). *München. med. Wchnschr.*, 1913, lx, 1411.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author suggests the use of the normal serum of pregnant women in cases of intoxication during pregnancy. He then discusses the successful use of such serum in cases of dermatoses and eclampsia. In the latter he now gives the serum intradurally instead of intravenously. He made this change in the administration because these patients have such marked cerebral symptoms. Serum therapy can be applied also to puerperal sepsis.

Since many puerperæ have hæmolytic streptococci in the lochia without symptoms, the author holds that their sera are analogous to those of convalescent cases of sepsis. Three cases he believes substantiated this assumption. He uses the serum also in gynecological hæmorrhage and anæmia.

RUNGE.

Fuchs, A.: Experiences with Pituglandol in Obstetrics (Erfahrungen mit Pituglandol in der geburtshilflichen Praxis). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxiii, 517.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author used pituglandol in six of his obstetrical cases, once each in atony in an old primipara with frontal presentation, in breech presentation with early rupture of the membranes, in an artificial premature labor as an adjuvant after the introduction of a bougie, in placenta prævia lateralis to hasten rupture of the membranes, and in a ten weeks' abortion to hasten expulsion of the products of conception.

In all of these cases, except the last one, the injection was always accompanied with definite success and never with any detrimental effect upon the mother or the child. The author injects 1 ccm. of pituglandol intramuscularly and warns against overdosing, to which he attributes the observed cases of cramp-like contraction of the cervix after injections of hypophyseal extract. Since several authors have reported a lowering of the foetal heart-rate after an injection of the extract, it is not advisable to employ it in threatened cardiac weakness except when ready for immediate extraction. In cases of atony in which there is prolonged contraction of the cervix it is advisable to administer morphine or pantopon to put the uterus at complete rest before giving the injection of pituglandol. In the employment of the extract during the early puerperium all unnecessary handling of the uterus is to be avoided in order to prevent untimely contracting. SIEBER.

Watson, B. P.: Pituitary Extract in Obstetrical Practice. *Canad. M. Ass. J.*, 1913, iii, 739.

By Surg., Gynec. & Obst.

Watson gives credit to Bell for being the first to use pituitary extract in obstetrics. He discusses the anatomy and physiology of the gland and the action

of its extract. He prefers the intermuscular injection and a standardized dose. Several cases are reported in detail where the extract was used opportunely in slight pelvic contraction, in persistent occipito-posterior position of the foetal head, in twin pregnancy, in induction of labor, and in placenta prævia. The author regards its use favorably also in post-partum abdominal distention and in urinary retention, thus avoiding enemata and catheterization. His conclusions are:

1. Pituitary extracts have a powerful effect in inducing and strengthening uterine contractions.

2. The type of contractions induced is similar to the normal, although at first there may be a tendency to prolongation of the pains.

3. Such prolonged contractions result in the slowing of the foetal heart, but the child is seldom in danger.

4. When given in the late part of the first and in the second stage of full-time labor, the polarity of the uterine contractions is not interfered with, but in early abortions and in the first stage a simultaneous spasm of the os may occur.

5. The chief field of usefulness of pituitary extract is in the first and second stages of labor, when there is delay due to feebleness of the pains alone or combined with other complications, such as malpositions of the head, malpresentations, multiple pregnancy, slight narrowing of the pelvis, etc.

6. In the induction of abortion, in the treatment of abortion already in progress, and in incomplete abortion, its action is so uncertain that it is not to be recommended except in cases where the os is widely dilated.

7. In the induction of premature labors its effects are uncertain, but if sufficient dosage be given they may be good.

8. In the induction of labor at full term and after, better results are obtained than in premature cases.

9. Pituitary extract gives good results in many cases of post-partum hæmorrhage, but is not superior to the various preparations of ergot. It has, however, the power of sensitizing the uterus, so as to allow these preparations to act more powerfully, and the combination is most effective.

10. It is a useful adjunct in the treatment of placenta prævia, used in conjunction with rupture of the membranes, the use of hydrostatic dilators, or turning.

CAREY CULBERTSON.

Popielski, L.: The Hypophysis and Its Active Principles (Hypophysis und ihre Präparate in Verbindung mit ihren wirksamen Substanzen). *Berl. klin. Wchnschr.*, 1913, l, 1156.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Substances increasing and decreasing the blood pressure are found in the hypophysis. Pituitrin and pituglandol increase the blood pressure, while physin decreases it. All these substances, however, have been used with good results to stimulate labor pains. It is remarkable that substances which in their physiologic action are directly antagonistic to

each other should cause the same action on the uterus. It must be emphasized that so far not a single reason is known why these substances excite labor pains. If the hypophysis acts in this manner, then the same action must be expected from all the other organs which contain vasodilatin as well as vasohypertensin. The author is very skeptical about the question of the stimulation of labor pains by hypophysin extracts.

GINS.

Spalding, A. B.: The Value of Abdominal Measurements in Pregnancy. *J. Am. M. Ass.*, 1913, lxi, 746.

By Surg., Gynec. & Obst.

The author has reviewed over two thousand records in reaching his conclusions. The measurements were made with a tape measure, one hand being placed on the upper border of the symphysis and the other on the ensiform cartilage. The uppermost margin of the fundus of the uterus was located and read off the tape. An effort is made in this paper to estimate the value of these measurements in so far as they relate to the size of the unborn child and to the probable date for delivery. The author discusses also the various rules laid down by other men in the past few years.

In a table presented is shown the weights of babies taken immediately after delivery in a series of 300 labors where the total uterine axis was carefully observed. In 157 the fundus measurements were between 34 and 37 cms. and the average weight for the babies lay between 3275 and 3395 gms. These figures are considered a rough standard for average normal babies. In eighty-five cases, in five of which there was twin delivery, the fundus measured between 38 and 45 cms. and the average weight for the babies was between 3555 and 4100 gms. These figures are considered the standard

for over-maturity. In fifty-five cases the fundus measurements were found to be 29 and 33 cms. and the average weight for the babies between 2125 and 2930 gms. This is the standard for imperfectly matured babies.

With experience one can utilize these measurements to advantage in certain cases of toxæmia, nephritis, heart-disease, etc., to determine the best period for the induction of premature labor or of the advisability of inducing labor at term. Unfortunately, however, the possibility of error in exceptional cases precludes the utilization of these measurements in the management of contracted pelvis. This is due to the fact that the weight of the child with the same abdominal measurement may vary in exceptional cases as much as 1 or 2 kilos. A great deal depends upon the care with which the measurements are made, on the condition of contraction or relaxation of the uterus, the skill in estimating the degree of settling, the thickness of the abdominal walls, and the accuracy in diagnosing such conditions as hydramnios and multiple pregnancy.

In another chart the author presents measurements of the uterus made at various weeks of pregnancy in a series of 411 cases. These patients gave birth to babies of normal weight within seven days of the expected time, according to Naegele's rule. For measurements of this kind the following rule is given: Measure with a tape measure the height of the fundus above the symphysis in centimeters, making allowance for settling when present, and add 2 to measurements between 22 and 26 cms., 3 to measurements between 26 and 30 cms., 4 to measurements between 30 and 32 cms., and 5 to measurements over 32. The sum will equal the probable week of pregnancy.

EDWARD L. CORNELL.

GENITO-URINARY SURGERY

KIDNEY AND URETER

Lucksch, F.: Recent Examinations of the Adrenal Capsules (Neuere Untersuchungen über die Nebennieren). *Prag. med. Wchnschr.*, 1913, xxxviii, 365.
By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The adrenal capsules of horses and cattle fed to rats proved to be poisonous, particularly the adrenalin (marrow substance). On 90 cadavers the adrenalin content was determined according to Follin's method. In acute infections the adrenalin was not decreased; in diphtheria and nephritis it was increased, and in chronic infections (tuberculosis, cranial hæmorrhage, and tumors) it was diminished. An examination of the results obtained by Robinson, who claimed that he could determine the sex of the fetus from the adrenalin content of the urine of the mother, does not yet permit any definite conclusions. The article closes with the report of two cases of adrenal tumors.

WIESEL.

Gradinescu, A. V.: The Influence of the Suprarenal Capsules upon the Circulation of the Blood and the Metabolism (Der Einfluss der Nebennieren auf den Blutkreislauf und den Stoffwechsel). *Arch. f. d. ges. Physiol.*, 1913, clii, 187.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

In numerous experiments with cold-blooded animals and mammals that are reported in detail by the author, the influence of the extirpation of the suprarenal capsules, the extirpation of the adrenal capsules, and the administration of adrenalin was determined. The results obtained were as follows: The removal of both capsules in one operation caused death within 10 hours in the case of dogs, in 48 hours in cats, and in 7 hours in rabbits. The extirpation of one adrenal capsule was not fatal. After total extirpation of the adrenal capsules the number of erythrocytes in the peripheral blood rises slowly to double the amount; this is the result, not of a new formation of red blood corpuscles, but of the transgression of large quantities of blood plasma into the tissues and serous membranes. The examination of the physico-chemical properties of the plasma reveals no changes, and the quantity of water contained in the muscles remains unchanged. The blood plasma with all its components therefore goes over into the tissue. Furthermore, the total extirpation of the adrenal capsules effects a decrease in the interchange of gases without changing the respiratory quotient. The nitrogen quotient shows an inclination to sink; the temperature of the body sinks considerably; the lymph circulation is retarded; the lymph formation is diminished. Adrenalin injections, on

the other hand, effect an increase of the discharge of lymph from the ductus thoracicus, a rise in temperature in normal animals, and death from hyperthermia. Extracts and adrenalin affect also the endothelium of the blood-vessels, because the infiltration of the connective tissue effected by artificial circulation in the frog is prevented by these substances. If adrenalin is brought into the artificial circulation or directly upon the tongue or mesentery of guinea pigs, it causes a contraction of the blood capillaries and retardation or inhibition of the circulation. From the abolition symptoms and changes caused by adrenalin the author concludes that the adrenal capsules serve as regulators of the intermedial metabolism. The metabolism between blood and tissue depends upon the changes in the lumen of the capillaries caused by the secretive products of the adrenal capsules and the contraction of the endothelium.

SALLE.

Childs, S. B., and Spitzer, W. M.: Röntgenographic Study of the Normal Kidney, Its Pelvis and Ureter. *J. Am. M. Ass.*, 1913, lxi, 925.
By Surg., Gynec. & Obst.

Diversity of opinion as to interpretation of skiagrams of kidney, warrants fixing a standard by study of a group of normal cases. By normal cases are meant cases with negative history, absence of genito-urinary symptoms, and giving negative findings in urinalysis, and for all points above ureteral orifice, negative findings on cystoscopy and ureteral catheterization.

Technique. Röntgenographic catheters; collargol, 8 to 20 per cent; gravity pressure of two feet, using 50 ccm. burettes; injection to the point when pain is complained of, varying from 4.5 to 15 ccm. (greater volume being considered pathognomonic); stereoscopy with uniform focus and röntgenographic technique.

Findings. Mobility (excluding respiratory), 0 to 3.5 cm. Pelvis either single or double; calices number 3 to 6; upper border convex, lower concave; absence of concavity abnormal. Catheter clings to convex border. Ureter shows wide variations in size, contour, and position; kinks, angulations, and apparent constrictions in normal cases. Alterations may be due to variations in tonus. Laxity marked in multiparæ. Pain, shock, and temperature the result of overdistention, especially rapid distention, and not so much dependent on the drug or percentage. Care in injection will reduce these difficulties so as to provoke no disagreeable complications. Emphasis laid on stopping injections at onset of pain.

For after-treatment, he recommends morphine

and small doses of whisky well diluted, the last as diuretic. The report includes 10 cases (20 kidneys) with table and skiagrams. LOUIS L. TEN BROECK.

Braasch, W. F.: Clinical Observations on Essential Hæmaturia. *J. Am. M. Ass.*, 1913, lxi, 936.
By Surg., Gynec. & Obst.

The term "essential" is applied here only to those cases in which there is neither clinical evidence of renal insufficiency, visible organic change in the renal parenchyma, nor evidence of renal infection.

Braasch analyzes 77 cases from the Mayo clinic, of which 26 were operated upon. Males were affected in 75 per cent of the cases, most of them occurring between the ages of 40 and 50. The right side was involved in about two-thirds of the cases. Hæmaturia had begun over fifteen years previous to the time of the operation in 19 per cent of the cases, but in most cases it was of about a year's duration. In the unoperated cases, the time of onset was considerably more recent. The physical findings were negative as regards the kidneys. The blood pressure averaged 132, and the hæmoglobin 63 per cent in the operated, and 84 per cent in the unoperated cases. Urinalysis showed, in addition to blood, a few casts and pus cells in some.

The author discusses at great length the differential diagnosis. Other lesions to be considered are chronic nephritis, infectious nephritis, bleeding pyelitis, neoplasms, renal tuberculosis, lithiasis, and renal varix. Differentiation in all of these conditions would appear to be possible.

Nephrectomy has cured fourteen cases; nephrotomy gives far less satisfactory results. The results of palliative treatment, consisting merely of catheterization of the affected side, with or without the injection of methylene blue, a colloidal silver salt, or epinephrin, gave permanent relief in but four cases. In the others, hæmaturia appeared again.

In the matter of treatment, Braasch lays special emphasis upon the difficulty and importance of deciding upon the presence of a small and early renal neoplasm. When the hæmaturia has incapacitated the patient, or when neoplasm is regarded as possible, exploration is indicated. The good results obtained from nephrotomy would justify its use in the absence of negative findings in the kidney.

The etiology is carefully considered. Nephritis seems now to be regarded by most authorities as the probable causative factor. But, in Braasch's opinion, the evidence against this is sufficient to enable us to exclude it in most cases. A satisfactory explanation of this type of hæmaturia is yet to be given.

J. DELLINGER BARNEY.

Casper, L.: The Diagnosis of Bilateral Renal Tuberculosis (Zur Diagnose der doppelseitigen Nierentuberkulose). *Deutsche med. Wchschr.*, 1913, xxxix, 1140. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Before the Berlin Surgical Society, Casper gave a brief review of the progress made in the diagnosis

and treatment, especially, of renal tuberculosis since the introduction of ureteral catheterization and functional kidney tests. The mortality of patients nephrectomized for tuberculosis lately is only 2 per cent. In spite of this success, however, the present views must further be revised, principally in regard to the diagnosis of unilateral or bilateral kidney tuberculosis. The former view, that a sediment-free and apparently normal urine which proves to be tuberculous in the guinea-pig inoculation must originate in a tuberculous kidney, no longer holds good. From his own experience and from careful investigations of Kielleuth, Casper regards the fact as proved that pure excretory tuberculosis can occur only when nephritic symptoms are also present, because the nephritic kidney, in contradistinction to the healthy kidney, is permeable for tubercle bacilli. Hence, the former radical standpoint, that in kidney tuberculosis the finding of tubercle bacilli in the urine of the second kidney forbids an operation, must be modified so that the presence of tubercle bacilli produced by a slight nephritis of the one kidney is not a contra-indication for a nephrectomy of the other. Only when the tuberculous process of the second kidney is absolutely settled by the regular and abundant finding of leucocytes and erythrocytes, as well as by the diminished function of the second kidney, is an operation to be avoided.

DENCKS.

Kapsammer, G.: Tuberculosis of the Kidney. *Am. J. Obst.*, N. Y., 1913, lxxviii, 429.

By Surg., Gynec. & Obst.

From a review of the literature and an analysis of 62 cases of his own, Kapsammer deduces that tuberculosis of the kidney is, as a rule, unilateral; that men suffer from it more frequently than women, and that it is found on one side as frequently as on the other. The first symptom, and oftentimes the only one, is bladder difficulty. Hæmaturia is one of the more infrequent symptoms of the disease and is more frequently seen in the early than in the later stages. Kapsammer believes that many of the "essential hæmaturias" are, in reality, cases of very early tuberculosis, exploration of the kidney even failing to clear the diagnosis because of the smallness of the lesion.

Pus is regularly found in the urine, but when the urine is alkaline the chances are against tuberculosis.

Pain is not constant in the symptomatology and may even lead to suspicion of the unaffected kidney when the tuberculous kidney may be producing no pain. The chief and most exact method of diagnosis is cystoscopy with catheterization of both ureters, since the diagnosis is only complete when the condition of both kidneys has been accurately determined. Nephrectomy is the only therapeutic measure to be considered, unless high temperature and prostration are present, due to secondary infection, when primary nephrotomy is indicated. Nephrectomy also exists as an indication when other non-florid foci exist elsewhere, and even may be

considered in the presence of tuberculosis of the opposite kidney, providing the disease is not extensive enough to prevent its proper functioning.

N. SPROAT HEANEY.

Rupprecht: Tuberculosis of the Kidney and Bladder Including Urogenital Tuberculosis (Über Nieren- und Blasentuberkulose einschliesslich der Urogenitaltuberkulose). *München med. Wchnschr.*, 1913, lx, 1459.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Tuberculosis of the kidney is caused, not by an ascending infection from the genital tract, but by a hæmatogenous infection from some extrarenal tuberculous focus. It is the larger emboli which contain numerous tubercle bacilli that produce kidney tuberculosis; the circulating bacilli are excreted. Usually only one kidney is involved, but in one half of the cases the other one becomes affected later, probably also by the hæmatogenous route. More rarely tuberculosis of the kidney spreads by the lymph stream to the perinephric tissues or to the retroperitoneal lymph glands; much more frequently it spreads downward, involving the ureters and bladder. Its development is insidious and without symptoms at first. Its symptoms for a long time point to the bladder and not to the kidney as the seat of the trouble. At first there is polyuria and pollakiuria; later, tenesmus and pyuria. In such cases careful bacteriological and urological examinations are necessary, and if the other kidney is found healthy the diseased kidney should be extirpated. Left untreated, kidney tuberculosis causes death in five to ten years by involving the bladder, the opposite kidney, etc.

Apparent spontaneous cure may occur in rare cases as the result of obliteration of the diseased ureter and gradual encapsulation and atrophy of the "closed" tuberculous kidney. Usually, however, these patients finally die of bladder involvement, nephritis of the other kidney, etc. Several nephrectomized women later bore healthy children. If the secondary bladder tuberculosis has not advanced too far at the time the nephrectomy is performed, it frequently heals spontaneously, as does the tuberculous ureter that is left behind. Tuberculin injections have not proved of value in renal tuberculosis, but after nephrectomy it has frequently aided in overcoming the remaining tuberculosis of the mucous membrane of the ureter and bladder. Patients suffering from renal tuberculosis are "open cases." Numerous bacilli are excreted in their urine and they, therefore, are infectious.

RUNGE.

Wildbolz, H.: The Surgery of Tuberculosis of the Kidneys (Chirurgie der Nierentuberkulose). *Neue deutsche Chir.*, 1913, vi.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Chronic tuberculosis of the kidneys appears frequently as an independent or primary disease, al-

though from the anatomic-pathological standpoint in particular it must be regarded almost always as a secondary disease. In 10 per cent of the cases of tuberculosis of the kidneys the affection is bilateral. At the beginning, however, chronic tuberculosis of the kidneys is almost exclusively unilateral. Usually the disease appears first in the papillæ of the marrow, and the adjoining areas of the pelvis of the kidney soon become involved. In the advance stage, groups of tubercles are to be seen upon the surface of the kidney.

As to the pathogenesis, Steinthal's old theory that the kidney is infected through the blood system is now generally accepted, and there is no doubt that the disease spreads down the urinary tract, as was suggested by Baumgarten.

In the diagnosis the examination of the urine is of greatest importance; albumin, pus, and blood are often found, though sometimes only in small quantities. The examination for bacilli, when performed carefully, gives positive results in about 90 per cent of all cases. The usual and best test is the carbolfuchsin stain. The antiformin method has only a little advantage if the urine is alkaline and mucous. Tubercle bacilli and smegma bacilli cannot always be differentiated from each other, because, as Rolly's experiments have shown, some of the smegma bacilli, like the tubercle bacilli, cannot be discolored with alcohol. The smegma bacilli, however, lie single or in loose groups, and Koch's bacilli are seen, in some places at least, in very close bunches. The guinea pig test is the best indicator for the presence of tubercle bacilli. When a tuberculous infection of the urinary tract has been ascertained positively, it remains to find out which side is affected and how far the disease has spread. This can be done only by cystoscopy and catheterization of the ureters. Urine separators are unreliable. By cystoscopy, a decision may often be made as to which kidney is diseased from the condition of the orifices of the ureters and their surroundings. There are, however, some observations (Kapsammer and Rövving), which show a diseased orifice of the ureter on the sound and healthy side of the bladder. Which side is diseased, to what degree the diseased side is affected, and whether the function of the sound side is normal can be determined from a microscopical examination of the urine obtained by catheterization and a functional diagnosis of the kidney.

The prognosis is usually bad. The author found that in Switzerland more than half the number of cases not operated upon died five years after the beginning of the disease. The therapy for chronic tuberculosis of the kidneys should be early nephrectomy, especially as the disease is only unilateral at the start and does not spread downward until later. A tuberculous kidney cannot be cured with tuberculin. Kümmel, the author, and others have had to operate in cases which had been treated with tuberculin and declared cured by internists.

The primary mortality after nephrectomy for

tuberculosis is 4 per cent or less, and the fatal cases are mostly complicated with pneumonia, myocarditis, embolism, or meningitis. The secondary mortality is about 15 per cent, and in these cases death is usually caused by phthisis. The total mortality of cases operated upon is about 20 to 25 per cent, in contrast to the 60 per cent mortality in cases not operated upon. After operative treatment of chronic tuberculosis of the kidneys, 75 per cent of the patients live for many years and more than half are permanently cured. The local influence of nephrectomy upon the bladder and the urine depends upon the degree to which the disease has advanced at the time of the operation. Pus or bacilli in the urine disappear only after months or years. The vesical troubles also disappear slowly, and in some patients never completely. Irrigation of the bladder, as an after-treatment, should be omitted, as it gives rise to irritation of the vesical walls. Instillations of 3 per cent iodoform oil or sublimate solution are often of value. After the tuberculosis has been cured, the nephrectomized patients are as resistant as those with both kidneys normal, provided they are not exposed to dangers and overexertion. In 15 early cases the author's therapy was exclusively conservative from the beginning; in 14 of them, however, operation had to be performed later on because the conservative treatment had been without results.

The article contains many interesting details in regard to the pathology, clinical diagnosis, and therapy, and also a voluminous bibliography.

OEHLECKER.

Zollinger, F.: Traumatic Nephritis (Beiträge zur Frage der traumatischen Nephritis). *Schweiz. Rundsch. au. f. Med.*, 1913, xiii, 825.
By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author distinguishes between trauma which results in rupture of the kidney, general bodily injury, and chronic trauma such as is caused by excessive athletics. Traumatic albuminuria is frequent and may be caused by hæmorrhage and circulatory disturbances which may lead to necrosis. There may be purulent nephritis from infection of the kidney through the intestine or the bladder, or albuminuria from degenerative and regenerative processes in the region of the kidney wound. If there are œdema, uræmia, and retinal changes as well as albuminuria, the diagnosis of traumatic nephritis is justified. He reports cases from the literature in which the disease could be attributed to trauma. Unilateral cases of traumatic albuminuria and cylindruria are also observed. There is a possibility that an occult kidney disease existed before the injury, and that the trauma merely brought on an exacerbation. In cases of unilateral trauma the possibility of a secondary sympathetic involvement of the other kidney must be considered. The author discusses course, prognosis, and treatment with a thorough consideration of the literature bearing on these points.

A. HEINEKE.

Bratton, H. O.: Hydronephrosis; with Report of Cases. *Ohio St. M. J.*, 1913, ix, 411.

By Surg., Gynec. & Obst.

Bratton reports twelve cases in which an attempt was made to determine the existence of hydronephrosis in its early stage, before the condition gave rise to a palpable tumor with a dilated pelvis and a thinned cortex.

The author points out that in order to diagnose hydronephrosis early, one must have recourse to more exact information than can be obtained from the general symptoms, physical examination, and the routine examination of the urine. The use of such general methods alone will often make it difficult to differentiate an early hydronephrosis from such conditions as calculus of the kidney or ureter, acute infection of the kidney, and such extra-renal conditions as inflammation of the prostate and seminal vesicles, the symptoms of these latter diseases being not infrequently similar to those caused by a hydronephrosis.

According to the author, a diagnosis of early hydronephrosis must be based on convincing evidence of increased capacity of and obstruction to the renal pelvis. Such evidence is obtainable by measurement of the capacity of the renal pelvis and by an X-ray examination when the pelvis is distended with silver salt.

The author proceeds as follows: Both ureters are first catheterized, usually with a No. 7 catheter, and, while the cystoscope is still in the bladder, a warm dilute solution of argyrol is injected into the kidney by gravity. After measuring the renal pelvis, the cystoscope is removed, leaving the catheter in place. Next, a functional test with phenolsulphonaphthalein is made over a period of 15 to 30 minutes and separate specimens of urine are also obtained for microscopic study. Following this, an X-ray is taken to exclude renal or ureteral calculus, after which the pelvis is distended with 12 per cent collargolum and another picture taken to determine the size and position of the renal pelvis, ureteral kinks and the angle at which it enters the pelvis.

Of the 12 cases studied, 7 showed typical colic; 4 showed pus, blood, or both, microscopically; and in only 2 cases was there a marked impairment of functional capacity as shown by the phthalein test. The capacity of the diseased kidney ranged from 20 to 100 ccm. as compared to an average of about 11 ccm. on the healthy side.

Forssman: Reconstruction of Cystic Kidneys, with a Contribution to the Knowledge of the Pathogenesis of Cystic Kidneys (Rekonstruktionen von Cystennieren, zugleich ein Beitrag zur Kenntnis der Entstehung von Cystennieren). *Beitr. z. pathol. Anat. u. allg. Pathol.*, 1913, lvi, 500.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The question whether cystic kidneys, provided that the cysts are not interpreted as cystadenomatous formations but as retention cysts, are

produced by interruption of the canalization as a consequence of congenital malformation or constriction, or depend on inflammatory processes, can be solved by the reconstruction method. For this investigation only such cystic kidneys are suitable as those in which inflammatory changes are absent. On such a kidney the author could show that all cysts are retention cysts and that the interruption of the canalization occurs at various points along the collecting tubules. The cystic transformation was not localized in a certain part of the canal. It occurs where the resistance of the tissues is slight because of the loose character of the tissues, but also in collecting tubules, which are closely surrounded by connective tissue. Here the increase of the intracanalicular pressure leads to the dilatation.

FRANGENHEIM.

Hohlweg, H.: Further Data on the Treatment of Pyelitis by Lavage of the Renal Pelvis (Weitere Erfahrungen über die Behandlung der Pyelitis mit Nierenbeckenspülungen). *München. med. Wchnschr.*, 1913, lx, 1420.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author briefly discusses the various methods of treating pyelitis: Lenhart's therapy, that is the intake of large quantities of fluids to irrigate the pelvis of the kidney from above; the prescribing of urinary antiseptics; vaccination therapy; the Meyer-Betz method of raising the acidity and concentration of the urine. It is emphasized that with all these methods only a limited number of cases are bacteriologically cured, and that by the active treatment by means of direct irrigations of the pelvis of the kidney a much higher percentage can be cured. Of the 17 cases reported, 15 became free from symptoms of pyelitis and were discharged, clinically as well as bacteriologically cured. The late results based on cases examined as late as two years after they had been discharged showed that the benefit derived was permanent. Nothing is accomplished, however, by irrigating those cases which begin as an infection of the renal pelvis with the colon and in which the inflammatory process has involved the kidney tissue so that the albumin content of the urine is higher than can be accounted for by the pus.

As irrigating solution the author uses principally silver nitrate solutions, increasing the strength from 1 to 2 parts per 1000 to $\frac{1}{2}$ or 1 per cent. The reaction, locally, of the tissues and the sensitiveness of the patients to these solutions vary considerably. Irrigations were done two to three times a week, and after two to three weeks' treatment in the hospital the patients were discharged. Naturally the best results follow early treatment, which should be instituted as soon as the condition is recognized.

OEHLEK.

Villard and Perrin: Kidney Transplantation (Transplantations rénales). *Lyon chir.*, 1913, x, 109. By Journal de Chirurgie.

This article is a general review of the technical results of experimental autoplasmic, homoplasmic, and

heteroplasmic transplantation of the kidney, to which the authors add their own experiments, only the original part of the work being reviewed.

They do not believe in the profuse preliminary washing of the kidney with Locke's solution, as advocated by Carrel. They think it does more harm than good and tends to immobilize the liquid blood in the kidneys; they merely put the forceps on the renal artery and vein. This interruption of the circulation can be kept up for an hour and a half without causing necrosis. As the implantation of the ureter in the skin was followed by a fatal ascending infection, they found it necessary to graft the ureter into the bladder. This makes it necessary to select the vessels on which to graft, in the abdomen or pelvis, and prevents them from transplanting onto the large vessels of the neck, which is easier technically. Implantation on the renal vessels themselves, which would be the most satisfactory, is possible but very difficult on account of the shortness and depth of these vessels. The splenic vessels seem to be the vessels of choice.

The authors have tried auto-, homo-, and hetero-transplantation, with results as follows:

1. In autotransplantation, three experiments on dogs resulted in two failures from thrombosis of the vessels and gangrene of the graft. Transplantation was on the renal vessels on the opposite side in one case and on the splenic vessels in the other. One successful case was that in which the implantation was made on the external jugular, with the ureter opening on the skin. The transplanted kidney secreted pale urine without albumin but containing 2.8 per cent of urea. This secretion was continued until the death of the animal, 68 days later, from another operation. Histological examination of the kidney showed diffuse ascending pyelonephritis, without any trace of necrosis.

2. In nine experiments of homotransplantation, on dogs, none showed really complete success. Twice there was fatal hæmorrhage from slipping of the vascular sutures, one of these transplantations having been on the external iliac vessels and the other on the splenic vessels; and twice there was almost immediate thrombosis. In one of these cases the graft was made on the renal vessels and the other case was a graft en masse of the two kidneys in front of the cava. In another instance of graft en masse of both kidneys, the animals died quickly before the cause of death was determined. In four cases — one of implantation on the renal vessels and three on the great vessels of the neck — there was gangrene or absorption of the graft, but in three of these cases the kidney had secreted urine for a few days.

3. In heterotransplantation, three experiments tried with no success whatever were: A graft en masse of the kidneys of a cat on a dog; graft of the kidney of a pig on the cervical vessels of a dog; and of the kidney of a dog on the cervical vessels of a goat. In the latter case, re-establishment of circulation in the transplanted organ, and necrosis did not

take place for 20 days; the ureter had not passed a drop of urine.

Villard and Perrin's experiments confirm the results of other workers who have attempted kidney grafting by vascular transplantation. In spite of the continued failure of heterotransplantation, they think it would be permissible to try it in selected cases on man, for the operation is harmless. The kidney of an animal as closely related to man as possible should be selected; that is, one of the higher forms of monkeys. Unger has done this in one case, but without success.

LENORMANT.

Braizew, W. R.: Experimental Studies of the Diagnosis of Kidney Function (Experimentelle Beiträge zur Frage der funktionellen Nierendiagnostik). *Verhandl. d. XII Kong. Russ. Chir.*, 1913, xii, 167. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

According to extensive experiments by Braizew, the indigo-carmin and phenolsulphonephthalein tests are alike in their results, and the phlorizin test is not identical with them.

In order to examine these tests comparatively and to determine the localization of the excretion of indigo-carmin and phlorizin from the kidney, he performed a series of experiments on dogs. In the first series, 4 to 5 ccm. of alcohol were injected into the kidney. When the lesion was in the cortical substance, the indigo-carmin output was most decreased. When it was in the medullary substance, the sugar output was the most affected. In the second series of experiments wedge-shaped pieces of kidney tissue weighing from 5 to 17 gms. were removed. A decrease resulted in the amount of urine, the molecular concentration, the percentage of solid constituents, as the sugar content, and the intensity of the indigo-carmin coloring. In the third series, the cortical substance was removed from the surface of the kidneys. The more the cortical substance removed, the greater the decrease in the urine. A decrease occurred also in the molecular concentration, the indigo-carmin coloring, the urea content, and the sodium chloride content. The phlorizin content in some cases was normal, in others a little increased. In the fourth series, which included four cases, 3 to 4 gms. of medullary substance were removed. No more could be removed on account of the danger of injuring the large blood vessels. This amount of urine, the concentration sugar, the urea content, and the indigo-carmin coloring decreased the latter less than in the preceding series. In the fifth series, which included five rabbits and ten dogs, indigo-carmin was injected into the veins. After 12 to 30 minutes, both the normal and the injected kidney were extirpated. It was shown that the coloring matter was excreted from the cortical substance and from the epithelium of even the injured tubules. The excretion did not take place simultaneously from all the tubules, but there were alternating periods of activity and rest in different groups.

Braizew comes to the following conclusions: The

liquid part of the urine is excreted from the malpighian bodies of the cortical substance. It cannot be absorbed by the medullary substance. The solid constituents, including the salts, are excreted from the epithelium of the urinary tubules. The sugar, phlorizin test, is excreted in the medullary substance, probably from the epithelium of Henle's loops. The urea is excreted from the epithelium of the urinary tubules. In interstitial nephritis the excretion of sugar and indigo-carmin is hindered chiefly by the formation of connective tissue which binds the epithelium of the tubules to the endothelium of the capillaries. In parenchymatous nephritis the excretion of these substances is normal, because of the slighter changes in the epithelium and the lower excretion of fluid. The indigo-carmin and phenolphthalein reactions are more valuable than the phlorizin test because they localize the anatomical lesions more accurately. In the indigo-carmin test the intensity of the coloring is the most important point. If one kidney is normal, the degree to which the other is affected may be determined by catheterizing the ureters and comparing the coloring of the two sides. In the phlorizin test a comparison of the sugar percentage of the two kidneys is valuable. Casper's modification is not reliable. Both the phlorizin and indigo-carmin tests should be made, as they supplement each other. Pyelotomy is to be preferred to nephrotomy because every incision through the kidney results in a considerable destruction of kidney parenchyma.

HESSE.

Young, E. L.: Clinical Functional Tests; Methods. *Boston M. & S. J.*, 1913, clxix, 466.

By Surg., Gynec. & Obst.

The author discusses the place of the phenolsulphonephthalein test in nephritis, and concludes that "the phenolsulphonephthalein test comes nearest to fulfilling all the requirements of a clinically valuable functional test in that it is easy to use, is harmless to the patient, and gives accurate and consistent knowledge of the actual working ability of the kidney. It is a fact that the practitioner wants more than the knowledge of whether the glomeruli or tubuli of the kidney are affected. In surgery it already has a recognized place. In medicine it has a certain value which will increase with its increased use."

FRANK HINMAN.

Geraghty, J. T., and Rowntree, L. G.: The Value and Limitations of Functional Renal Tests. *J. Am. M. Ass.*, 1913, lxi, 939.

By Surg., Gynec. & Obst.

The authors discuss functional renal tests with reference to their judicious selection for obtaining the needed information in any individual case by the use of a single test or a proper combination of a small number. They divide the tests into two groups: those which determine functional capacity by showing the excretory ability through a determination of various substances in the urine, such as

the many dyes and other chemicals, as potassium iodide, lactose, sodium chloride, urea, sugar, and enzyme, diastase; and those which indicate renal function through the retention of certain substances in the blood as ions, determined through electrical conductivity, molecules, determined through cryoscopy, urea, incoagulable nitrogen and cholesterolin.

Of the dye group, only one need be employed and this should be phenolsulphonaphthalein on account of its proved superiority. A selection of the other tests should be made with reference to the three great types of renal disease: (1) Unilateral and bilateral diseases necessitating ureteral catheterization; (2) bilateral surgical diseases secondary to obstruction in the lower urinary tract, and (3) medical diseases of the kidney.

Tests with reference to the first group should show three things: (a) The total or combined renal function without ureteral catheterization; (b) the relative function, and (c) the absolute functional value of each kidney. The authors consider the phenolsulphonaphthalein test as "incomparable so far as a total function is concerned," and, in cases in which it is very low, advise the use of one or another of the retention tests.

In ureteral catheterization, two difficulties are met, viz., inhibition of function and leakage around the catheter. A previous total phthalein determination will detect any discrepancy due to inhibition. However, inhibition is not always equal on each side, and, in this case, diastase and urea percentage, together with a difference in urinary pigment with a consideration of the total phthalein, previously obtained, will be of value. In the case of leakage around the catheter, the catheterization can either be repeated, using a Garceau catheter on one side and collecting transvesically on the other, or, when this is not practical, the desired knowledge may be largely obtained from the original specimens through urea percentage, diastase, and the time of appearance of the phthalein on the two sides. Here the diastase is more reliable since it is not affected through dilation.

In the second group, the total function is the only information needed, and the phthalein test if repeated at intervals in the course of the preliminary treatment will indicate the most favorable time for surgical intervention. However, in this group of cases with a low phthalein, tests of retention are of great importance, and the authors consider blood urea as determined by Marshall's method as most valuable for indicating cumulative phenomena.

In medical cases, the tests fall into two groups, those attempting to differentiate between tubular and glomerular lesions and those to determine total function. "At present so little is positively known or proved concerning the specific function of any individual part of the kidney that any attempt to divide nephritis is premature," but tests for total renal function in this group are of undoubted value. The authors divide medical cases for functional work

into: (1) Cases clinically suspected of nephritis, but exhibiting practically normal renal function; (2) mild cases of nephritis without cardiac decompensation; (3) advanced nephritis without cardiac decompensation; (4) Cardiorenal cases, and (5) chronic passive congestion in cardiac cases unassociated with nephritis.

With reference to uræmia, the authors claim that functional studies will indicate that it is impending, even when its proximity is not suspected from clinical studies. They claim that a continued failure on the part of the kidney to excrete phenolsulphonaphthalein, lactose, etc., associated with the continuous, marked, and increasing accumulation of urea or total incoagulable nitrogen or low serum freezing-point, "indicates the early appearance of uræmia, regardless of the underlying pathological condition.

In conclusion, they state that functional studies always find their greatest value when associated with careful clinical studies and, when properly employed, yield most valuable information from the point of view of diagnosis and prognosis, and in the selection of the lines of treatment.

FRANK HINMAN.

Fitz, R.: Tests for Renal Function Based upon the Selective Excretory Activities of the Kidney. *Boston M. & S. J.*, 1913, clxix, 384.

By Surg., Gynec. & Obst.

Fitz describes the technique of the lactose, water, salt and iodide tests as applied to determine the selective excretory renal function, and discusses the value of the information thus obtained in the diagnosis, prognosis, and treatment of nephritis. "Abnormal tubular function is shown by the inability of the kidney to increase the concentration of the salt in the urine, when an excess of salt is added to the diet, and, by a delay in the excretion time of potassium iodide.

"Abnormal glomerular function is shown by the inability of the kidney to excrete lactose in the usual time and quantity. Furthermore, abnormal glomerular function is of two types. The vessels are either hypersensitive, as shown by a constant polyuria, increasing in response to the vascular stimulus of salt, or hyposensitive, as shown by a constant oliguria. The tests are of considerable quantitative value. In general, the severity of functional derangement shown by them corresponds with the clinical and anatomical severity of the disease. Cases studied by these methods can be grouped functionally into glomerular nephritides, tubular nephritides, and a mixed form which shows functional derangement of both systems."

FRANK HINMAN.

Christian, H. A.: General Summary of the Significance of Methods of Testing Renal Function. *Boston M. & S. J.*, 1913, clxix, 468.

By Surg., Gynec. & Obst.

The functional tests are summarized, by the author, with reference to their value in diagnosis,

prognosis, and treatment of renal conditions. They are of great value in diagnosis in surgical conditions of the kidney, but a functional lesion and an anatomical lesion must be distinguished, as a decrease in functional activity is not always accompanied by a demonstrable anatomical lesion. The repeated application of the tests will help to determine this point, as, for example, between a true nephritis and a renal disturbance consequent upon cardiac decompensation, or between functional derangement following urinary retention and an actual diffuse renal lesion secondary to urinary stasis along with chronic infection. In cases of this kind, the phenol-sulphonephthalein test has proved the most helpful, but only through its repeated application.

In cases of coma of difficult diagnosis, the determination of nitrogen retention in the blood is considered by Christian of greater value than that of phenol-sulphonephthalein.

The other methods of testing renal function which depend upon the selective activity of glomerulus, tubule, or blood-vessel do not at present justify a very accurate pathological diagnosis of the renal condition, although their application has materially advanced our ability in this direction. In prognosis, the author states that the tests are particularly applicable again in surgical conditions and that the phthalein test is the most applicable. He again emphasizes the repeated use of the test. In case of nephritis, more remote prognosis is better aided by other tests, as water, nitrogen, salt, and lactose. "In all these cases it is not the single test made once that is of value, but the repetition of several tests." In treatment, Christian thinks that we are not in a position to evaluate functional tests, as relatively little work has been done on their relation to therapeutic measures. In conclusion, he states that the tests are of unquestioned value in renal disease, "but they should supplement, not supplant, other ways of studying the nephritic."

FRANK HINMAN.

Arcelin: Radiographic Diagnosis of Calculus of the Pelvic Ureter (Calcul de l'urètre pelvien droit. Sur le diagnostic radiographique des calculs de l'urètre pelvien). *Lyon méd.*, 1913, CXX, 760.

By Journal de Chirurgie.

Arcelin reports the history of a case where radiography showed a calculus on the right kidney, a calculus in the upper part of the ureter, and a calculus at the level of the pelvic ureter. On operation, in 1910, no calculi were discovered. In 1912 the patient returned, and the radiograph this time showed a shadow only in the right pelvic ureter, not far from the uretero-vesical orifice. It was removed and the patient made an uneventful recovery. In connection with this case the author discusses the whole question of radiographic diagnosis of calculi of the pelvic ureter.

In every case the ureter should be catheterized in conjunction with radiographic examination. In some cases there is a shadow at the level of the pelvic

ureter. A sound is introduced and stopped by some obstacle, and an X-ray shows the end of the sound touching the calculus, which is displaced upward. In such cases there is no doubt as to the diagnosis. The sound may pass freely into the ureter, and the shadow of the sound and that of the supposed calculus do not touch. In such cases it is possible that there is a sufficient dilatation of the ureter to allow the sound to pass without touching. Collargol may be injected to determine whether the ureter is dilated.

Between these two extreme cases there are all sorts of intermediate conditions to be interpreted, and sometimes, even with the most careful examination, complete diagnosis is not possible.

Sometimes calculi are impacted in the pelvic ureter. The plate shows the shadow of the sound in contact with that of the foreign body. It is probable that in such a case we have a true calculus, but there is one source of error in that the sound may be arrested by a stricture of the ureter while the foreign body which causes the shadow is in another plane but in the same bundle of X-rays.

Sometimes the sound passes freely and its shadow is superimposed on that of the foreign body. In such cases there may be a dilated ureter, with the sound passing over or under it instead of to one side. An injection of collargol will overcome the trouble. But if there is a superimposed shadow without dilatation and without arrest of the sound, we have to consider a diverticulum containing the calculus, or a phlebolith of the periureteral veins, or some foreign body situated outside the urinary passages. Caution is necessary in such cases; all the clinical and radiological symptoms must be taken into consideration, and sometimes it is even necessary to perform an exploratory operation.

Sometimes, as in the case mentioned above, the orifice of the ureter cannot be located. A radiogram is taken showing the ureteral sound touching the bladder wall at a point thought to be the ureteral orifice. The shadow of the calculus, however, shows the real location of the ureter, and the direction of the sound is changed so as to reach it. This shows the absolute necessity for a close association between urinary surgery and X-ray work. In hospitals, in the past, the X-ray room has generally been at some distance from the operating and examining rooms of the genito-urinary service. In the future they should be located as close as possible to each other.

J. DUMONT.

Lorin: The Ureter after Nephrectomy (L'urètre après la nephrectomie). *Arch. urol. clin. de Necker*, 1913, I, 145.

By Journal de Chirurgie.

Experimentally, when the kidney is removed in a normal animal the lumen of the ureters remains open, but at the end of a year the walls of the ureters are slightly atrophied.

It is difficult to know clinically what becomes of the ureter after a kidney operation. Lorin studied this question in a number of cases of nephrectomy,

both of catheterization of the ureters on the operated side and by examination of the contractibility of the ureter. He also removed the ureter from a woman who had had a nephrectomy performed two and a half years previously for tuberculosis. This ureter was transformed into a fibrous cord.

He concluded that the decreased ureter had a tendency to become obliterated after nephrectomy, generally after about three years. Its mucous membrane disappears as well as the lumen. The contractions persist as long as the lumen is not obliterated.

The ureter of the removed kidney may be the origin of vesical hæmorrhage (which generally occurs only during the first few days), of pyuria, or of bacilluria. A return flow of urine from the ureter into the nephrectomy wound occurs only when the ureter is very badly diseased and has a large lumen and a rigid wall. A pathological ureter may be the cause of a post-operative fistula in the kidney wound, though such a condition is not always due to a lesion of the ureter. He thinks the simplest treatment of the ureter is best. It should be divided with the thermo-cautery at the lower part of the wound. This will give a good recovery without a fistula if the nephrectomy wound is completely closed and drained as little as possible. Removal of large sections of the ureters is useless and the various fixations of the ureteral stump troublesome.

MAURICE CHEVASSE.

BLADDER, URETHRA, AND PENIS

Kidd, F.: *Purpura of the Bladder*. *Ann. Surg.*, Phila., 1913, lviii, 388. By Surg., Gynec. & Obst.

Kidd reports a case of secondary purpura confined to the bladder but arising in a bacterial infection of the tonsil. The case was that of a 12-year-old girl with a history of a sudden desire to urinate and a sharp stabbing in the left iliac region spreading to the vulva. Examination showed deep tenderness over the bladder region, urine full of blood clots. Cystoscopy showed healthy ureters, and the bladder wall pale and healthy; but scattered over the fundus and trigone were seen patches of submucous hæmorrhages varying in size from a pin's head to a sixpence, some linear, some stellate; neither ulceration nor miliary tubercles present.

Different diagnosis. Purpura of the bladder wall or primary blood infection or tuberculosis at its very onset. No tubercle bacilli were found; the von Pirquet was negative.

The patient was kept in a recumbent position and calcium lactate in doses of 10 grains was administered three times a day for a week, when the patient was discharged as cured.

The interesting factor was cystoscopy, for the condition resembled exactly a purpuric eruption found on the skin, which cleared up like a simple purpura. This condition was unaccompanied by any other sign of hæmorrhage either in the skin or any mucous membrane.

LOUIS GROSS.

Lower, W. E.: *The Treatment of Recurrent Malignant Tumors of the Urinary Bladder with the High Frequency or Oudin Current; with a Report of a Case*. *Cleveland M. J.*, 1913, xii, 607. By Surg., Gynec. & Obst.

The author reports an interesting case of recurrence of malignant tumor of the urinary bladder which, when first seen, presents all of the characteristics of a typical papilloma. It was removed by the usual suprapubic operation which was followed by an uninterrupted recovery. The microscopical examination showed that the tissues contained definite carcinoma cells. Two years later there was a recurrent growth at the seat of the old tumor. This time the growth was treated by means of the high frequency current, five applications being made. The tumor completely disappeared, and at the time of writing, two years later, the bladder remains perfectly normal.

Héresco, P.: *Total Cystectomy for Multiple or Infiltrated Neoplasms of the Bladder* (De la cystectomie totale dans les néoplasmes multiples ou infiltrés de la vessie). *J. d'uro.*, 1913, iv, 169.

By Journal de Chirurgie.

The author has treated four cases successfully by operation. One lived ten, another six months, and the other two are well, one two and one half years, the other, one and one half years after the operation. He believes this is an argument in favor of total cystectomy in such cases and for the implantation of the ureters in the skin of the hypogastric region.

He believes skin implantation is very much superior to intestinal or vaginal implantation because it permits of catheterization at will and of disinfection of the pelvis with antiseptic irrigations. Implantation in the hypogastric region is preferable to that in the lumbar region because the patient can catheterize and irrigate himself and one collector can be used for the urine from both kidneys.

Brief case reports are given as follows:

Case 1. A man of fifty, with frequent and abundant hæmaturia, anæmia, and lumbar pain. The latter was worse on the right. The cystoscope showed a tumor that occupied the whole fundus and had a large base on the left wall of the bladder. On the right wall were two small tumors near the apex. There was diffuse cancerous infiltration of the whole bladder. A median hypogastric incision was made, lateral dissection of the bladder, and dissection and section of the ureters without opening the peritoneum. The bladder and half of the prostate were removed. The ureters were fixed into the upper part of the wound and the hypogastric cavity was tamponed. While the wound was healing the pelvis of the kidneys were frequently irrigated with silver nitrate. Convalescence was complicated by a perinephretic abscess which was evacuated. The recovery was complete with no trace of recurrence after two and one-half years.

Case 2. A man of fifty-nine, with a carcinoma occupying the trigonum and closing the left ureteral

orifice. The same technique was used in the case as in Case 1. Death occurred six months later without recurrence but with signs of nephritis.

Case 3. A woman fifty, with a very extensive degenerating papilloma covering the ureteral orifices. Same technique. Death at the end of ten months from pyelonephritis.

Case 4. A man of forty-five. At first a palliative operation was performed; hypogastric incision, partial excision of the tumor, cauterization, and drainage. Four months later total cystectomy. The ureters which were dilated to the size of the index finger were sutured to the skin. The cavity resulting from the extirpation of the bladder was drained through the perineum. The patient recovered and had had no recurrence a year and a half later.

The author calls attention to the advantage of drainage through the perineum, and of dissecting the ureters before suturing them to the skin, even though it involves some danger of gangrene.

J. TANTON.

Kleiner, I. S.: An Elimination Through the Mucosa of the Urinary Bladder. *J. Exp. Med.*, 1913, xviii, 310. By Surg., Gynec. & Obst.

Kleiner found very slight traces of dextrose in the urinary bladder after the intravenous injection of dextrose in nephrectomized rabbits. He concludes that the bladder is practically impermeable for diffusible substances that are present in the blood in great excess.

JAMES F. CHURCHILL.

Lemoine, G.: New Operation for Making a Bladder after Total Cystectomy for Cancer (Création d'une vessie nouvelle par un procédé personnel, après cystectomie totale pour cancer). *J. d'Urol.*, 1913, vi, 366. By Journal de Chirurgie.

The various methods of procedure for disposing of the urine after removal of the bladder are discussed, and Lemoine describes an operation of his own, based on Heitz-Boyer and Hovelacque's method of utilizing the rectum as a bladder. His method differs from theirs in that the ureter itself is used to discharge the urine, as the external sphincter insures continence. The ureter had been transplanted so as to open into the rectum at a previous operation.

1. *Abdominal operation.* The rectum was incised a little above the promontory, taking care to avoid the superior hæmorrhoidal artery. The rectal opening was carefully sutured in two layers, and a suture passed through the sigmoid opening and left free. The sigmoid flexure, having been freed by dissection of the mesocolon and incisions in the peritoneum at some distance from the intestine, was lowered to the perineal floor, into a space obtained by dissection of the posterior wall of the rectum, and the abdominal wall sutured.

2. *Perineal operation.* The sacrococcygeal incision was carried to just above the sphincter of the anus, and the removal of the coccyx, dissection of the rectum, and section of the levator ani and apo-

neurosis followed. The sigmoid flexure was lowered by traction on the ends of the suture.

A transverse incision of the perineum to the posterior orifice of the ureter was made, and by introducing the fingers through the perineal and sacral wounds the rectum was dissected circularly for a little way above the sphincter of the anus. The peritoneal cul-de-sac was cleaned out; the posterior edge of the upper part was caught in a pair of forceps, and the anterior edge of the lower part in another. This made it easy to invaginate the sigmoid flexure into the lower portion of the rectum. After having pulled on the suture, and thus occluded it, the orifice was fastened to the skin at the margin of the anus by means of silk sutures.

A sound introduced through the ureter was placed in the upper portion of the rectum, which formed the new bladder. A perineal drain was introduced, the perineal wound sutured, and the sacral wound tamponed. The new bladder was thus drained through the ureter and the perineum, entirely independently of the intestine.

The lowering of the sigmoid flexure, however, had been insufficient, so that it retracted into the sacral wound; the urine, which should have been discharged through the ureter and the perineum, was thus discharged into the sacral wound, and at the end of a few days the dressings were soiled with urine mixed with faecal matter.

The suturing of the intestinal incision in the lower part of the rectum near the sphincter and the lowering of the intestine to the anus were unavailing, and the patient died from infection the eighteenth day after the operation.

J. TANTON.

Vander Veer, J. N.: Some Aspects in Relation to Chronic Gonorrhœa, from the Standpoint of Surgery and Eugenics. *N. Y. St. J. Med.* By Surg., Gynec. & Obst.

From a large experience the author has come to believe that physicians generally are not impressed with the grave effects of gonorrhœal lesions and in consequence fail to make an absolutely accurate examination and diagnosis and do not effect cure. Carefully prepared smears of the urethral secretion, urinary and blood cultures, microscopical examination of the various constituents of the urine when voided in separate parts, endoscopic and cystoscopic examinations and inoculations into the guinea pig should all be made use of as conditions may suggest. Sometimes organisms present in the genito-urinary tract may be present likewise in the blood, nose, tonsils, and various other localized points and become sources of re-infection.

Publicity is absolutely essential and the day must come when the suppression of the gonococcus shall rank with that of the tuberculosis bacillus and the mosquito. The medical profession should unite and work with the church to put on the statutes a law compelling registration of this disease and prohibiting the sale of drugs for it except on a physician's prescription. Moreover, physicians must

compel themselves to be most painstaking and accurate in the diagnosis and treatment.

Iowa and Maine alone require health certificates before issuing marriage licenses. Iowa, Vermont, and Oklahoma list gonorrhœa and syphilis as contagious diseases. The necessity for immediate legislation to bring about an amelioration of the havoc wrought by these diseases is great.

HARRY D. ORR.

GENITAL ORGANS

Wolbarst, A. L.: A Case of Spindle-Cell Sarcoma of the Testis, with Unusual Features.
Med. Times, 1913, xli, 275.

By Surg., Gynec. & Obst.

The author reports a new case of tumor of the testicle and refers to one which he has already reported. He gives a complete history of the new case which he reports and credits Hoffman with having made a diagnosis of a diffuse spindle-celled sarcoma. Wolbarst describes the case as follows:

"When the writer, through the courtesy of Lubman, the attending physician, first saw the patient on May 19, 1913, three weeks after the growth was noticed by the patient, the following data were noted: The growth is soft, but not fluctuating, its longest diameter being five inches and its greatest transverse circumference eight and one-half inches. It is absolutely painless and without tenderness on pressure and resembles a hydrocele in its pear shape, but is opaque when examined by the light test. The inguinal glands on either side and the spermatic cord are not involved.

"Owing to the extreme rapidity of the formation of this large mass it was deemed prudent to withhold the positive diagnosis of malignant growth until the tumor proper could be examined on the operating table."

We are pleased to know that Wolbarst has made a diagnosis of spindle-celled sarcoma in a given case, because we regard it as extremely rare—so rare, indeed, that we consider it an anomaly. From the statistics which he has collected, he seems to be able to show that the largest number of tumors of the testicle are sarcomata as reported by hospital statistics. Ewing's article, to which he refers, would lead one to believe that this position is incorrect and that the diagnoses of tumors of the testicle, in a large percentage of cases, in the past, have been incorrect. The striking feature about the case described by the author is that there was no history of trauma or injury. He says that, in his case, there was no pain, but an extremely rapidly growing tumor.

In conclusion, the report is summarized as follows:

"The writer, in conclusion, desires to point out the following interesting and unusual features of this case: (1) Its extremely rapid growth; (2) its absolute painlessness; (3) the absence of trauma or other visible etiologic factor; (4) the universal degeneration of the testicular substance; (5) the comparatively rare form of the tumor, spindle-celled type."

Picker, R.: The Anatomical Configuration of the Human Vesicula Seminalis in Relation to the Clinical Features of Spermocystitis. *Urol. & Cutan. Rev.*, 1913, xvii, 463.

By Surg., Gynec. & Obst.

Picker has examined about 150 seminal vesicles by filling them through the vas deferens with Beck's bismuth paste to the maximum capacity ("surgical fulness"), after which he endeavored to disentangle the tube system. Thus he secured 72 specimens, 56 normal and 16 pathological, the classification of which is given in the following table:

A. Simple straight tubes.....	2	4%
B. Thick twisted tubes with or without diverticula.....	8	15%
C. Thin twisted tubes, with or without diverticula.....	8	15%
D. Main tube, straight or twisted, with large grape-like arranged diverticula.....	19	33%
E. Short main tube with large irregular ramified branches.....	19	33%
	56	100%

F. Various.

I. Embryological abnormalities.

Conduplication of ves. seminalis (specimen A. L.).

Rudimentary seminal ves. (specimen 59).

Ductus Müller persistens (specimen B. 17).

Vesicula seminalis covering ampulla (specimen 50).

Ductus ejaculatoris in the posterior wall of prostate (specimen 44).

These all belong to otherwise anatomically normal specimens.

II. Pathological conditions.

Inflammatory cicatricial adhesions not to be disentangled, cicatricial occlusions of both vasa, etc. (specimen 15).

Carcinoma vesicula seminalis (specimen I).

General total, 72 specimens.

The forms of the ampulla of the vas deferens, secured by studying the X-ray photographs, are shown to be as follows:

1. Simple narrow tube without diverticula:

(a) Straight.

(b) Twisted.

2. The same arrangement of the vas deferens:

(a) With small bud-like diverticula.

(b) With great diverticula.

1. Feathery arrangement.

2. Papillomatous arrangement (cauliflower-like, downy, etc.)

3. Ampullæ with "corpus diverticulare."

When infected, the straight, single tubes of group A might not give rise to many complications.

The infection of form B, characterized by thick, long screw-like twisted tubes with or without diverticula might in case of acute inflammation be

accompanied by abundant pus formation and high fever. In these cases, Picker has noted a very large inflammatory tumor, extending to the ampulla of the rectum, as well as strong subjective inconveniences originating in the bladder ("subacute cystitis" following inflammation of the seminal vesicle, especially if residual urine can be excluded) and the rectum. In the given case, he had to do with a disease of a vesicula seminalis of the type in which, after disappearance of the alarming and acute symptoms, the final cure of the disease takes place within an unexpectedly short time (3 to 4 weeks) by means of the complete evacuation of pus either in a natural way or through the massage treatment.

The rising of the pain is clearly to be explained by the anatomical configuration of the long and large twisted tubes, when these are filled to a maximum by the products of the inflammation. The best proof of the correctness of this conception is given by the immediate disappearance of the incontinence, attended by a pressing desire to urinate, through the evacuation of the pus, the pain reappearing immediately after the tube system has been filled again to the maximum.

Administering this evacuation treatment as often as necessary (even three or four times daily), he states he has been able to definitely relieve the patients of their distress, usually within one week, the patient very frequently emptying at one sitting pus quantities from 5 to 8 ccm. and, in one of his most remarkable cases, as much as 15 ccm. of thick yellow pus.

These cases, connected with such an abundant suppuration, might also be similar to those in which by shutting off the draining of pus or by insufficient evacuation of the retention, the morbid secretion makes for itself a path in the neighborhood of the vesicle and breaks down into the perivesicular and perirectal cellular tissue, into the peritoneum (Douglas' fold), or even into the rectum.

Form C is characterized by thin twisted tubes, with or without small diverticula.

In group D the main tube is straight or twisted, with larger grape-like arranged diverticula.

The many diverticles and windings, in the case of an infection, predispose to retention.

The case mentioned in class 3 might belong to groups C and D.

A short main duct with large ramified irregular secondary branches are distinguishing features of group E. Picker would, in the given case, proceed as though dealing with a seminal vesicle belonging to this group, when after the quieting down of the acute initial phenomena and the lysis of fever there is to be remarked an abundant draining-off of pus similar to group B; but the final evacuation of the large and swollen seminal vesicle is only to be obtained after a systematic massage treatment extending over several months. During this treatment there are emptied, together with normal sago-formed seminal secretions, numerous long and thick pus-threads and plugs, which in shape quite resemble the normal

sago-like secretions which are formed of leucocytes, containing those bacteria which produce, on interrupting the treatment, the recurrence of urethral discharge and cystitis so often observed in the chronic urogenital ailments. A. C. STOKES.

Young, H. H.: The Role of the Prostate and Seminal Vesicles in General Toxæmia. *J. Am. M. Ass.*, 1913, lxi, 822. By Surg., Gynec. & Obst.

Young says it is now becoming more generally recognized that the etiology of many obscure joint, cardiac, neurologic, and other diseases is to be found in chronic infections in remote organs, and, in recent years, the tonsil, nasopharynx and alimentary tract have come to be regarded as the frequent site of such infections. The extent to which the genito-urinary tract is to blame has not been appreciated. Chronic prostatitis and seminal vesiculitis are extremely common diseases and may exist for years without producing symptoms or attracting the attention of the patient. They may show themselves only as a danger seat when the patient marries or becomes the subject of chronic rheumatism or other forms of remote infection and toxæmia.

The etiology of these cases is by no means always gonorrhœal. Many cases arise from bacterial infection which comes down through the urinary tract, having been eliminated through the kidneys during acute infections in other parts of the body. Infections also reach the prostate from the rectum, not infrequently as a result of proctitis, ulcer, hæmorrhoids, etc., but more frequently they result from the long-continued practice of masturbation, which, in many cases, produces an extensive chronic inflammatory process involving both the prostate and seminal vesicles and the tissues around them, so that one frequently finds an extensive enlargement and pronounced chronic inflammatory condition associated with local and remote symptoms sometimes of severe character. The essential process is an endoacinous and periacinous inflammation in the prostate and chronic inflammatory infiltration within and about the vasa deferentia and seminal vesicles.

Owing to the fact that all these structures drain badly, being dependent on minute tortuous ducts and tubules, foci of chronic inflammatory infiltration remain unrelieved for years, often becoming surrounded by fibrous changes, and remaining centers for the absorption of toxins and infections.

L. G. DWAN.

Sasaki, J.: Experimental Atrophy of the Prostate, from X-Ray Treatment of the Testicles (Über die experimentelle Prostataatrophie durch Röntgenbestrahlung der Hoden). *Deutsche Ztschr. f. Chir.*, 1913, cxxii, 290.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Sasaki wished to determine whether atrophy of the prostate could be caused indirectly by X-ray

treatment, and what relation the changes in the testicle bear to those in the prostate. For his experiments he used five rabbits and four dogs, which were treated twelve to fifteen times for periods of from thirty-six days to five months. The testicles and prostates of these animals as well as those of eleven control animals of various ages and varieties were examined histologically. In three rabbits atrophy of the prostate was clearly evident both microscopically and macroscopically. In two dogs and two rabbits the atrophy was extreme; in the other animals it was not so pronounced. No case, however, escaped some atrophic change. Brown rabbits were more susceptible than black. In the dogs the changes were less than in the rabbits. Histologically there was either total atrophy or atrophy with degeneration, especially round-celled infiltration. The epithelium was decreased and the interstitial connective tissue increased. The muscular parts were atrophied. In rabbits the atrophy was complete; in dogs the central part around the ureter was more changed than the peripheral part. Sasaki believes that he has demonstrated that röntgen rays applied to the testicles not only inhibit the growth of the prostate, but cause retrograde changes in the fully developed organ. He discusses the histological changes, i.e., the disappearance of the seminal cells and the enormous increase of the interstitial cells. He believes that X-ray treatment of the testicles is an effective therapeutic measure in hypertrophy of the prostate. Already a few clinical reports substantiate it.

RUBRITIUS.

McCarthy, J. F.: Preliminary Report on Cystoscopic Operative Treatment of Early Intravesical Prostatic Intrusions and other Obstructive Conditions in the Region of the Vesical Sphincter. *Am. J. Surg.*, 1913, xxvii, 327. By Surg., Gynec. & Obst.

The author reports two cases in detail in which remarkable results were obtained by the use of the Oudin spark. Both patients were suffering from frequent micturition and in both there was an enlargement of the prostate glands. Vigorous applications of the spark were made a week apart for two or three treatments, and in both cases marked improvement resulted within two weeks and an apparent return to normal was noted within four or five weeks after beginning the treatment. As the interval since the disappearance of the symptoms has been too short, it cannot be said definitely that the cure is permanent.

The author emphasizes the fact that cystoscopic examinations should be made in all patients over fifty who present symptoms referable to the genito-urinary tract. He does not lay much stress on the rectal examination in these cases, as the prostatic enlargement may not show there.

He emphasizes the necessity of estimating, from a number of sittings, the amount of urine remaining after the patient empties his bladder as thoroughly as possible. He deems it an imperative necessity to

make a cystoscopic and posterior endoscopic examination of patients showing any appreciable amount of residual urine, as in all likelihood it is at this time, particularly, that these patients will prove amenable to suitable cystoscopic operative treatment.

EDWARD L. CORNELL.

MISCELLANEOUS

Rubaschow, S.: Röntgenology in Urologic Surgery (Die Röntgenologie im Dienste der urologischen Chirurgie). *Ztschr. f. urol. Chir.*, 1913, i, 465.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The presence or absence of perinephritic adhesions can be determined only by means of röntgenoscopy (Durchleuchtung), Collargol, argyrol, or oxygen injected into the bladder and renal pelvis facilitates the röntgenological examination, aids in the diagnosis, and with sufficient care is not dangerous to use. In the examination for floating kidney or hydronephrosis, pyelography is indispensable. In the diagnosis of renal tuberculosis the examination has hitherto seldom been employed. Here again pyelography is of great value, as it gives exact information as to the localization and extent of the disease. Collargol injection should be given without pressure to avoid damage to the friable renal parenchyma.

All the sources of error, thirty-two in number, in the diagnosis of kidney stone are exhaustively considered. In 3 to 6 per cent (2 per cent — Immelmann) stones are found at operation which could not be demonstrated röntgenologically. The most important sources of error are the chronic indurative process in the kidney, tuberculosis, calcified lymph glands and intestinal stones. In the röntgenology of ureteral stones, forty-six sources of error are mentioned and thoroughly discussed in part. Fifty-one röntgen sketches are included in this practical compilation.

FRANGENEHM.

Pousson and Desnos: French Encyclopedia of Urology (Encyclopédie française d'urologie). Paris: O. Doin, 1914. By Journal de Chirurgie.

When this work, of which the first two volumes have just appeared, is finished, it will without doubt be the most important and extensive contribution that has ever been made to the science of urology. The term encyclopedia is justified, for it is a thorough presentation of all that is known at the present time in regard to the urinary organs and their diseases.

There are six volumes, of a thousand pages each, with many splendid illustrations. It is edited by sixty-five collaborators well known for their previous writings or their special work in urology. If it is finished in two years, as planned, and the succeeding volumes have the same scientific value and the precision and clearness that the first two have, the directors and editors will have every reason to be proud of it. Scientific urology originated in France, and was largely developed and perfected by the Necker school, so it is peculiarly fitting that such a

work as this should have been conceived and written there. The first two volumes are a guaranty of the value of the whole.

In the first volume there is, first, a history of urology, edited by Descros, extending from early Egyptian times to the present, illustrated with a large number of engravings and reproductions of manuscripts of great interest.

The second part is an anatomical and physiological study of the urinary system, beginning with a study of its comparative anatomy by Pellegrini, followed by a study of the various parts of the urinary apparatus in man. Papin describes the kidney, ureter, and suprarenal capsules, and Ambard reviews the normal physiology of renal secretion. The rest of the urinary apparatus is described by Rieffel and Descomps and Aubaret.

More than 250 pages are devoted to a study of normal and pathologic urine by Labat, who gives detailed descriptions of the various methods of analysis, and by Achard and Paiseau, who discuss the toxicity, bacteriology, and septic properties of the urine.

In addition to these three principal parts there are three chapters, possibly of less scientific value but of great practical interest, on asepsis and antisepsis in urology, instruments used in urology, and general and local anæsthetics. The first two are by Pierre Janet, the third by Ertzbischoff. They give details as to the choice of instruments, sterilization of apparatus, electric installation, and indications and contra-indications for various anæsthetics.

The systematic description of the various diseases of the urinary system begins with the second volume. This whole volume is devoted to the pathology of the kidney, but does not complete it. It begins with a study of the examination of the kidneys and ureters, the anatomical and functional examination being written by Pasteau and Ambard and the radiological examination by Arcelin. Each of these three authors has made original contributions to progress in the field in which he writes.

Traumatisms, wounds, and contusions of the kidney are treated by Carlier and Heitz-Boyer; the forms of nephritis requiring surgical intervention by Pousson, with whom this is a favorite subject; surgical nephritis, pyelitis, and pyonephroses by Michon; diseases of the kidney during pregnancy and diseases of the genital organs of women by Chevassu. This chapter will be of interest to the general surgeon and obstetrician as well as to the

urologist. Pousson and Carles discuss all forms of calculi, and Legueu gives a masterly description of renal lithiasis. In conclusion, renal tuberculosis is discussed by Rafin and tumors of the kidney by Tuffier and Brechot. Each of these parts has a complete bibliography and abundant and well-chosen illustrations.

LENORMANT.

Starkey, F. R.: The Organs of Internal Secretion in Relation to Male Organs of Generation.

Urol. & Cutan. Rev., 1913, xvii, 468.

By Surg., Gynec. & Obst.

In this article, Starkey calls our attention to the relation between the glands of internal secretion and sexual activity. He brings out the point that early puberty is often due to the hyperactivity of the pineal gland in early childhood. He also states that hypopinealism of the gland is frequently accompanied by exceedingly strong erections in young male children, and also is responsible for genital as well as somatic infantilism. In hyperactivity of the pituitary gland there is a marked effect upon the growth of the male genitalia, and also hypoadrenalism is liable to produce infantilism of these organs.

He brings out the point that individuals of precocious sexual development are usually short of stature, with a square body and short legs and a profuse development of hair. The opposite indicates an underdevelopment of the sexual organs.

He notes also that increased function of the thyroid produces full development of the sexual organs and that incomplete development of the thyroid are frequently noted together. He believes that the pituitary body is increased in activity at the time of puberty. Also that the thyroid gland enlarges and the voice changes and there is an increase in the development of hair.

After puberty is established, hypopituitarism is responsible for sexual apathy, impotency, and shriveling of the sexual organs. The author believes that many pernicious sexual habits are caused by abnormal development of the pineal and thyroid glands.

He brings out the point that, after 45, the male experiences a recession of the sexual activity, and that oftentimes at that age the male becomes unbalanced from a nervous standpoint and various constitutional disturbances appear, thus producing really a male climacteric.

A. C. STOKES.

SURGERY OF THE EYE AND EAR

EYE

Knapp, A.: Report of a Case of Traumatic Equatorial Rupture of the Sclera. *Arch. Ophthalm.*, 1913, xlii, 494.
By Surg., Gynec. & Obst.

Knapp reports a case of rupture of the sclera at the equator which was diagnosed after removal of the eye. The tension remained normal after the rupture. A bluish swelling on the sclera proved to be a hæmatoma in Tenon's capsule over the site of the rupture.
C. G. DARLING.

Zade, M.: Contribution on Metastatic Ophthalmia (Kasuistischer Beitrag zur metastatischen Ophthalmie). *Arch. f. Ophthalm.*, 1913, lxxxv, 294.
By Zentrabl. f. d. ges. Chir. u. i. Grenzgeb.

The evidence seems conclusive that in all cases of metastatic suppurative ophthalmia, the invading organisms gain entrance into the eye through emboli, even in those cases in which bacterial examination is negative. It is not so easy to tell, however, by anatomic examination, how much bacterial reproduction has taken place post-mortem in the tissues of the eye. In the case presented the eye was enucleated and fixed four hours after death. The clinical diagnosis was septicæmia with streptococcal of strongly hæmolytic type.

Four days after admission, in spite of surgical and serum treatment, there developed bilateral metastatic uveitis, and on the eighth day the patient died. In the right eye the almost completely destroyed choroid coat, the slightly affected corpus ciliare, the iris and the hypopyon were free of cocci. Suppuration must have been of purely toxic nature.

The retina, which had separated from the other coats and was almost completely destroyed, consisted largely of colonies of cocci. The course of the infection in the vessels of the retina could not be demonstrated. In the other eye the primary involvement of the retina could be more conclusively shown. The capillaries in the sheath of the central nerve fibres were filled with cocci. The other anatomical findings were the same as in the right eye, save that the retina was still adherent. Here and there the cocci had penetrated from the retina into the vitreous humor, but the outer coat of the eye was intact. As in most other cases there was endocarditis, and the metastases in the eyes were the only localized points of inflammation in the area supplied by the carotids. The minute calibre of the retinal capillaries seem to predispose to embolic inflammation, the infection having begun in the hand five weeks before. The streptococci, in the cases of metastatic ophthalmia, seem to be much more virulent than the pneumococci, and more particularly is this true of

the hæmolytic streptococcus longus of Schottmüller, which existed in this case. The possibility of post-mortem multiplication of the cocci must be accepted. In the case cited by the author the most rapid increase probably took place during the few hours before death. During life the organisms probably do not remain long at one point in the capillaries. They either penetrate the vessel wall or are driven on by the bloodstream. Zade adds the report of another case which did not come to post-mortem in which there was a unilateral ophthalmia — a case of phthisis bulbi following meningitis with an associated cardiac affection of similar origin.
HALBEN.

Zentmayer, W.: Hydrophthalmos, with a Histological Report of Two Cases, One of Which Presented a Congenital Coloboma. *J. Am. M. Ass.*, 1913, lxi, 1103.
By Surg., Gynec. & Obst.

After a succinct but comprehensive description of hydrophthalmos, the author summarizes the opinions of contributors to this subject as to its etiology and treatment. He then analyzes the replies received from a large number of ophthalmic surgeons in answer to six questions relating to the advisability of operation, type and results of operation, percentage of cases showing evidences of inherited syphilis, and percentage of cases occurring in negroes, and concludes that the best method of treatment was some form of sclerectomy.

The wealth and variation of opinion as to the etiology of hydrophthalmos is emphasized by the summary. The author's cases tended to support the view of several contributors that the essential factor is an absence or incomplete development of the canal of Schlemm, and that a probable contributing factor is the presence in the angle of the anterior chamber of prenatal connective tissue.

Judging from the replies to his questions from contemporaneous American surgeons, and from his review of the literature, the author concludes that because of the anatomical condition iridectomy is dangerous unless it is performed at a very early stage of the disease; that paracentesis and sclerotomy must be performed frequently and are unsatisfactory; that sclerectomy can best be accomplished by the method of Fergus-Elliott.

E. W. ALEXANDER.

Harrower, D.: Two Cases of Chronic Glaucoma Simplex Treated by Iridotaxis. *Arch. Ophthalm.*, 1913, xlii, 486.
By Surg., Gynec. & Obst.

Harrower reports two cases of simple glaucoma treated by iridotaxis as advised by Borthen. He thinks the results have been exceedingly gratifying.
C. G. DARLING.

La Grange: New Operation for Chronic Glaucoma. *Tr. Internat. Cong. Med.*, Lond., 1913, Aug.
By Surg., Gynec. & Obst.

The old methods of operation for chronic glaucoma, iridectomy, sclerotomy and similar operations have given very poor results. La Grange proposes a new operation which consists in making a subconjunctival fistula by the performance of a marginal anterior sclerectomy.

He has been performing this operation for ten years, and it has given very much better results than any other. He says that in all cases the hypertension which is the chief symptom of glaucoma can be overcome. He reports 140 cases, all performed more than a year ago, in all of which a permanent fistula was established with relief of hypertension and with success in regard to vision in 95 per cent of the cases. Of the other 5 per cent, who lost their vision, all were serious cases with trophic disturbances of the optic nerve or very acute vascular disorders.

► The technique varies somewhat with different operators. La Grange considers the trephine a dangerous instrument and uses scissors or a punch to perform the resection under the conjunctiva. In the original article, he describes his technique in great detail. Halt prefers a Graefe's knife, while Elliott and a large number of English operators prefer a small trephine.

La Grange reviews the indications for sclerectomy and the advantages to be derived from combining with it an ordinary iridectomy. He concludes that iridectomy should be used only to avoid prolapse of the iris. The curative value of his operation lies in the resection of the sclera, that is in the establishment of a permanent subconjunctival fistula which allows the aqueous humor to pass out of the anterior chamber of the eye into the conjunctival sac. Iridectomy is sufficient for the cure of acute glaucoma but excision of the iris is not necessary in chronic glaucoma. Anterior sclerectomy with a marginal incision spares the sphincter of the iris with great advantage to the patient. He can use myotics successfully and keep the light-regulating mechanism of the eye intact.

Selenowsky: The Diagnosis of Sarcoma of the Choroid; Two Cases of Sarcoma with Decreased Intra-Ocular Pressure and One Case of Sarcoma of the Eye after Evisceration of the Eyeball (Zur Frage der Diagnose des Sarcoms der Gefäßhaut des Auges. Zwei Fälle von Sarcom mit vermindertem intraoculären Druck und ein Fall von Sarcom des Auges nach Exenteration des Augapfels). *Russk. Vrach.*, St. Petersburgs., 1913, xii, 553.
By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

From his own cases and those described in the literature the author comes to the following conclusions: The pigment of melanotic sarcoma has its origin in the red blood cells, as is shown by the color of the pigment and its localization along the blood vessels. The possibility that the pigment in non-melanotic sarcoma originates in the stroma of the

choroid cannot be denied. The different forms and the size of the chromatophores in the pigmented part of the tumor, the proliferation of the pigment, the epithelium of the retina, and its penetration into the substance of the tumor, show that both views as to the origin of the pigment in melanotic sarcoma are justified.
JOFFE.

Crédé-Hörder, C.A.: Ophthalmia Neonatorum; Etiology, Pathology, Therapy and Prophylaxis (Die Augeneiterung der Neugeborenen, Aetiologie, Pathologie, Therapie und Prophylaxe). Berlin: Karger, 1913.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Blenorrhoea in the newborn may be due to numerous other organisms in addition to the gonococcus. Aside from the bacteriologic findings the difference in the clinical course characterizes the non-gonorrhoeal from the gonorrhoeal. The non-gonorrhoeal forms are much milder, and under no circumstances is the cornea affected. For the manner of the infection, the presence of the foetal head in the vagina without the protective covering of the membranes is of much significance; prolonged expulsion and early rupture of the membranes increase the danger. Over one quarter of the number of cases of ophthalmia neonatorum are late infections.

The author denies the explanation given that the incubation period in these cases is prolonged. In addition to the direct transference of gonococci to the eyes of the new-born there are other possibilities of infection. The organisms may have entered the Maibomian glands and later infect the eye from there. After a careful and detailed description of the clinical picture the author briefly discusses the treatment, which, wherever possible, should be left to the eye specialist.

Prophylaxis is naturally of extreme importance, and the author discusses it in detail. The mild irritation which occasionally follows the introduction of silver into the eye is unimportant. After numerous investigations the author states that this is confined, as a rule, to the conjunctiva of the lids and usually disappears in a few days. The author has tested a large number of silver preparations but found none superior to 2 per cent argente nitras. He recommends the physician not to stop with one drop in each eye, but to instill three drops into each eye, and two upon the edges of the lids. He also deems it important to cleanse the external genitalia thoroughly before the birth of the head.
VOIGT.

Bruns, H. D.: Ophthalmia Artefacta. *Old Dominion J. Med. & Surg.*, 1913, xvii, 136.

By Surg., Gynec. & Obst.

Bruns reports a case in which both eyes were repeatedly injured by the patient herself, the injuries recurring with suddenness over a period of many months.

The clear defination and black color of the lesions were unlike anything known to the observers. The vision of the right eye was reduced to light percep-

tion, and that of the left, to the perception of fingers at eight feet. Multiple symblepharons resulted from the ulcers. The patient had also a self-inflicted dermatitis. The cause of the black sloughs is unknown.

C. G. DARLING.

EAR

Shambaugh, G. E.: Chronic Obstructive Middle-Ear Deafness. *J. Am. M. Ass.*, 1913, lxi, 1206.

By Surg., Gynec. & Obst

In this article the author brings out the importance of differentiating more clearly between the various cases of destructive middle-ear deafness so that the cases likely to improve under treatment may be separated from those in which treatment will be of no avail.

The author believes that the term "chronic simple" or "chronic non-purulent otitis media" should be substituted for "chronic catarrhal otitis media" because pathologically the process is one of infection of the lining membrane with round-celled infiltrations and thickening and the subsequent formation of fibrous connective tissue. Associated with this process may be tubal occlusion usually with retraction and thickening of the drum membrane. The relation between the severity of the condition and the extent to which the hearing is impaired varies greatly. The chief cause of deafness lies in the adhesive bands which connect the ossicles and membrane to the walls of the tympanum. Folds of mucous membrane form a fan-shaped ligament around the neck of the hammer and often a more or less complete partition between the attic and the cavum tympanum proper. Normally these folds are composed of two layers of flat epithelial cells with a few blood vessels between. Inflammation, however, results in a marked thickening which must constitute an important factor in producing rigidity of the conducting mechanism.

On the whole, the prognosis with regard to the progress of deafness is better if the occlusion of the tube has disappeared; persistent tubal occlusion usually indicates a process which is still active and one in which very probably there will be further increase in the deafness. Another factor in the prognosis is the development of secondary degenerative changes in the cochlea noted by a defect for higher notes of the Galton whistle. The chances of an improvement in the hearing are less in those cases in which occlusion of the tube has disappeared. On the other hand, the defect in hearing in cases of persisting occlusion of the tube, especially if secretion in the tympanum is present, as a rule is more readily impaired by treatment. EARLE B. FOWLER.

Reik, H. O.: The Value of Nasopharyngeal Surgery in the Treatment of Chronic Exudative Otitis Media. *Bull. Johns Hopkins Hosp.*, 1913, xxiv, 289.

By Surg., Gynec. & Obst.

The author believes that it is an accepted fact that chronic exudative otitis media, with its char-

acteristic tendency to progressive deafness, has for its principal cause and continuously exciting factor some abnormality in the nose, pharynx, or nasopharynx such as hypertrophied turbinates, deflected septum, hypertrophied or submerged diseased tonsils, or adenoids. He believes further that even after an acute exudative otitis media is established the ear can be restored to a normal condition and safeguarded for the future by prompt and proper treatment of the exciting factors in the nose and throat.

The author reports 34 cases of deafness depending upon some nasopharyngeal abnormality, and from a study of the chart it is observed that in 32 cases there was immediate improvement of hearing to some degree and in 2 cases there was no apparent change. In none was there any immediate loss of hearing. Later observations showed that of the 32 cases of immediate improvement, 26 remained improved, 4 showed additional improvement, and only 2 lapsed back from the first improvement to the previous state of hearing.

In conclusion the author sets forth very emphatically his belief that simple exudative otitis media which is due to abnormal or diseased conditions in the nose or throat can be arrested in its progress by removal of these exciting conditions; that in such cases the progressive deafness can be stopped and further loss of hearing prevented; and that in some few cases the hearing power may be materially improved. Success of this kind, however, depends upon the proper performance of nasopharyngeal operations so that there shall be complete and thorough eradication of the abnormality without injury to neighboring normal structures.

GEORGE E. BEILBY.

Harris, T.: A Brief Consideration of Certain Recent Views Regarding Otosclerosis. *Laryngoscope*, 1913, xxiii, 801.

By Surg., Gynec. & Obst.

The author weighs and considers briefly the various views in regard to the nature of otosclerosis. In 1885 Bezold first demonstrated that this loss of hearing for low tones was the result of rigidity in the oval window.

The early view in regard to the etiology was that the condition was the result of a disease of the middle ear. Politzer holds that it is a primary affection of the labyrinthine capsule originating in the bone itself. New bone tissue is developed which presses out the old bone and advances toward the oval window and the stapes, leading to stapes ankylosis. Siebermann believes the starting point is upon the border between the labyrinthine capsule and the connective-tissue bone, the earliest stage being the lacunary resorption of the bone by means of the Haversian canals, while in other areas apposition is effected by means of osteoblasts. Denker concluded that the disease was usually of a primary nature. Manasse, from an examination of seventeen temporal bones from ten patients holds: (1) That the predilection area for the diseased process is the

anterior border of the oval window. (2) That the disease is virtually a transformation of the labyrinthine capsule. The new bone, instead of being compact, contains trabeculae between which lies a greater or less number of large open spaces. This spongy bone becomes much harder and closer with age. (3) That the initial stage of the disease proceeds from the blood vessels themselves. (4) Stapes ankylosis is not an essential part of the disease.

In summing up, Harris concludes that much is yet to be learned as regards both the histology and the etiology and that we can offer little for a cure as long as the latter is so obscure. We can say with confidence, however, that in the majority of cases, a determination of the disease is entirely possible. While nine years have elapsed since Denker's book on the subject, Harris regards his description of the clinical disease as eminently correct. Denker says, "In the cases of progressive hard-hearing, which show an unchanged or virtually normal drum membrane, a patent Eustachian tube and the Bezold triad of symptoms, we may conclude that the pathological changes are only in the stapes and the annular ligament and in the bony areas bordering on the oval window. In other cases where the functional test does not give the Bezold triad, but where there is a pronounced reduction of the upper hearing-limit, where bone conduction is not lengthened, and where the Rinne is not pronouncedly negative, there is an addition to the disease of the oval window, an extension of the process further into the capsule of the labyrinth, or an involvement of the membranous labyrinth."

EARLE B. FOWLER.

Mignon, M.: A Modification of the Technique in Mastoid Dressing (Modification de technique des pansements mastoïdiens). *Tr. Internat. Cong. Med.*, Lond., 1913, Aug. By Surg., Gynec. & Obst.

The author proposes replacing the bandages of a mastoid dressing about a week after the operation by an aluminum apparatus called a mastoid cover. The apparatus has a hook to fit around the ear which keeps it in place and protects the wound. This simplification in dressing is satisfactory to the patient, gives a better appearance, facilitates quick dressing, and gives as good results. A. Goss.

Page, J. R.: The Report of a Case of Paracoustic Vertigo and Nystagmus Cured by Operation on the Labyrinth. *Ann. Otol., Rhinol. & Laryngol.*, 1913, xxii, 321. By Surg., Gynec. & Obst.

The author reports the first case in which the labyrinth operation was performed in this country for the relief of vertigo.

The patient, a man 44 years of age, gave a history of deafness and stuffiness of the right ear from boyhood, but no discharge from either ear. For seven years he complained of disturbance of equilibrium on exertion, which accelerated the heart action, and for two years he experienced decided

disturbances of equilibrium upon pronouncing certain letters and hearing certain sounds.

After the labyrinth operation, the symptoms were relieved and six months later the patient had no disturbance of equilibrium resulting from external sound or that of his own voice, though a slight tinnitus persisted.

ELLEN J. PATTERSON.

Dench, E. B.: The Technique of the Labyrinth Operation. *Laryngoscope*, 1913, xxiii 184.

By Surg., Gynec. & Obst.

Various methods of entering the labyrinth for the relief of certain pathological conditions are described and divided into four groups as follows:

1. In cases of suppurative labyrinthitis with probable extension to the meninges, the author advocates entering the labyrinth according to the method devised by Neuman. This method consists of a complete radical operation with lowering of the facial ridge to the extreme limit. The dura over the tympanic and tympano-antral roof, and the lateral sinus from above the knee to the vicinity of the jugular bulb are exposed. The dura is separated and the bone in front of the sinus is removed toward the facial ridge until the two limbs of the posterior semicircular canal are opened, and continued until these openings become slits. A fine probe is inserted and carried into the vestibule. The openings are then enlarged until a probe of ordinary size can be inserted into the vestibule. The auditory portion of the labyrinth is drained by removing the thin layer of bone between the oval and the round windows.

2. In cases of circumscribed labyrinthitis which are occasionally found at the time of the radical operation and in which there are no symptoms or only the fistula symptom is present, the author cures the diseased area.

3. In draining cases of diffuse labyrinthitis with no symptoms of extension to the meninges the author follows the radical operation with lowering of the facial ridge by opening the horizontal semicircular canal at its most prominent portion and inserting a probe.

4. For the relief of vertigo or vertigo and tinnitus in chronic, non-suppurative inflammation of the labyrinth, Dench believes the vestibule can be opened below and behind the prominence of the horizontal semicircular canal without performing the radical operation and has carried this out on the cadaver. Another means of entering the vestibule developed by the author in experimental work is a complete mastoid operation with wide exposure of the tympano-antral roof. The dura was exposed and the bone removed inward until the prominence of the superior semicircular canal appeared. The superior wall of the horizontal semicircular canal and the superior surface of the petrous pyramid were removed whereby the superior semicircular canal was opened. The vestibule was opened by removing the roof of the superior semicircular canal. The destruction of the canals and nerve endings was completed by the curette. EARLE B. FOWLER.

SURGERY OF THE NOSE, THROAT, AND MOUTH

NOSE

Voorhees, I. W.: Conservative Surgery of the Nasal Septum. *J. Am. M. Ass.*, 1913, lxi, 1195.
By Surg., Gynec. & Obst.

The surgeon is cautioned to make a very careful diagnosis before performing the submucous operation on the septum as good respiration is not always prevented by a badly deformed septum. The causes producing nasal insufficiency may be anterior, posterior, or between the two. A special type of insufficiency is that in which with each inspiration the *alæ nasi* sink in and thus cut off the air entering the nose. This is due to a weakened condition of the accessory muscles or cartilages in the wings of the nose. The turbinates are also frequently the cause of the obstruction through hypertrophy either of the bone or of the soft covering. Soft hypertrophy may be either local or constitutional in origin. The chief constitutional cause is intestinal, cardiac, or renal. Frequently nasal insufficiency arises from a nasal discharge arising either in a sinus of the mucous membrane, and produced either by local or by constitutional factors. In chronic sinusitis the discharge falls into the nasal fossæ, dries, and forms crusts which occlude the nasal passage. In such cases, if the septum is removed no advantage is gained because the discharge still continues. In the naso-pharynx the chief causes of obstruction are adenoids, posterior tips of the inferior turbinate, and polypi. Unscientific practitioners use these facts as excuses for performing the submucous operation which, as it does not cure the patient, is brought into disrepute. The septal causes of nasal obstruction are: deviations, thickening, fractures, spurs, gumma, abscess, tuberculum septi.

The purpose of the submucous operation is to straighten, not to remove, the septum. All that is required is to take out the redundant portion, and fracture the crooked elements so that they may be held in place by simple splints. (The Asch submucous operation.) If the deviation is limited to the ethmoid, the little finger should be sterilized and passed into the nostril, and the perpendicular plate should be fractured by pressure. The nose should then be packed with long strips of sterile gauze saturated with liquid petroleum, which should be removed in twenty-four hours. H. B. BROWN.

Mackenzie, G. W.: Complications that May Arise during or after Operation for Correction of Septal Deviation. *J. Am. M. Ass.*, 1913, lxi, 1197.
By Surg., Gynec. & Obst.

One should always keep in mind the danger of toxic effects of the anæsthetic used. Much care is

needed in making the primary incision, which if improperly done will lead to delay and result in damage to the mucous membrane. Perforations of the mucous membrane may be obviated by filtration of the membrane preceding the operation.

Perforations are serious when they pass through both sides at corresponding points. A button-hole in the mucous membrane on one side only need cause no anxiety. A successful means for replacing the flaps prior to applying the dressing is to have the patient blow the nose forcibly, first from one side and then from the other. Hæmorrhage, fracture, faulty packing, infection, flattening of the nose, hæmatomas, erysipelas, empyema are mentioned as complications to be avoided. Excessive hæmorrhage is usually venous, and occurs low down and in front. Secondary bleeding has never been noted. In packing, the operator should be careful to have the raw surfaces of the mucous membranes in apposition. A frequent cause of infection is a previously existing disease of the sinuses, the tonsils or the adenoids.

Severe reaction may follow the operation if at the same time an operation is performed on the turbinates or accessory sinuses. Removal of too much cartilage may result in flattening. Proper packing will prevent hæmatomas. In suspected cases of empyema of an accessory sinus, an attempt to cure it should be made before operating upon the septum. H. B. BROWN.

Auerbach, J.: The Uses and Limitations of Paraffin in the Treatment of Ozena. *N. Y. M. J.*, 1913, xcvi, 566.
By Surg., Gynec. & Obst.

This paper is based on the study of 32 cases of genuine ozena, the most pronounced symptoms of which are fetor and crust formation. That the case may come under the definition of genuine ozena, as given by Fränkel, the author has not included a case of accessory sinus empyema or a case having local areas of suppuration.

By the use of hard paraffin (melting point 50° to 52° C.) embolism, sometimes following the injection of softer oil, was avoided. Under thorough aseptic technique the paraffin is injected without previous incision under the mucous membrane of the inferior turbinate, or septum or floor of the nose, as the individual case may indicate.

Within from three days to a week, the secretion becomes more liquidated and less tenacious and there are fewer crusts.

This improvement lasts from two to five months when reinjection becomes necessary. The author reports eight cases demonstrating the relief obtained by this method.

Sluder, G.: Etiology, Diagnosis, Prognosis and Treatment of Sphenopalatine Ganglion Neuralgia. *J. Am. M. Ass.*, 1913, lxi, 1201.

By Surg., Gynec. & Obst.

In previous articles Sluder has pointed out the very extensive distribution of nerves radiating from the sphenopalatine (Meckel's) ganglion, and has drawn a clear picture of the large area of pain dependent upon a lesion in its structure. This nerve center becomes involved by the extension of inflammatory processes from the postethmoidal-sphenoidal cells or from the membrane of the nose. Some cases of sphenopalatine ganglion neuralgia are due to a systemic toxin. In all of his cases of either origin the author has found that cocaine applied to the ganglion has always stopped the pain, though there may be a recurrence necessitating a second application.

The ganglionic lesion may be produced by lesions of the nerve trunks which supply the ganglion (the second division of the fifth and the vidian nerves). In the latter case the pain can be stopped only by the intrasphenoidal application of cocaine or some local anæsthetic applied centrally to the ganglion. Alcohol injected into the region of the ganglion does little good; injected into the ganglion itself it is of but temporary avail in relieving the pain.

In considering the treatment of the pain by injection the author points out the anatomical difficulties in the use of bent needles, and states that a straight needle is best and may be passed through any nose. The pterygomaxillary fossa is constantly reached at 0.33 cm. back of the posterior tip of the middle turbinate, which marks the anterior limit of the sphenopalatine foramen, and the pterygomaxillary fossa lies external to the plane of the sphenopalatine foramen. Therefore if the needle is passed under the posterior tip of the middle turbinate at its junction with the lateral wall, in a direction upward, backward, and slightly outward, it must pass into the pterygomaxillary fossa and enter the immediate vicinity of the sphenopalatine ganglion. The distance from the point at which the needle enters to the ganglion is 0.66 cm. When local applications fail to stop the pain, an injection of 0.5 cc. of 5 per cent phenol in water or in 95 per cent alcohol is recommended.

H. B. BROWN.

THROAT

Davis, H. J.: Chart and Brief Notes of a Case of Cavernous Sinus Thrombosis Following Left Tonsillitis in a Boy Aged 10; Fatal Termination in Eighteen Days. *Proc. Roy. Soc. Med.*, 1913, vi, Laryngol. Sect., 174.

By Surg., Gynec. & Obst.

The author reports a case of unilateral parenchymatous tonsillitis in a previously healthy boy, with oscillations of temperature varying from 98° to 106° with rigors, and symptoms of cavernous sinus thrombosis developing the thirteenth day of illness, followed by death in five days.

In the discussion which followed, O'Malley Thompson and Horne agreed that it was difficult to trace the route of infection of the cavernous sinus from the tonsil, but that the histories of cases and post-mortem findings seem to suggest that even in so-called tonsil cases the thrombosis was really of sphenoidal origin. M. Whale claimed that the route of infection was through the tonsil, pterygoid plexus, facial and angular veins, and then by way of the ophthalmic vein.

ELLEN J. PATTERSON.

Sheedy, B. D.: The Results of Tonsillectomy under Local Anæsthesia. *J. Am. M. Ass.*, 1913, lxi, 1227.

By Surg., Gynec. & Obst.

This article gives the anatomy of the tonsil, an analysis of deformities of the throat caused by poor operations, and a description of the author's method of performing tonsillectomy. He believes that deformities caused by an imperfect method of enucleating are less harmful than incomplete removal (tonsillotomy) and that deformities which do occur are the result of faulty technique. Of the 100 cases examined, 80 had visible deformities, and the other 20 seemed normal in all respects; in 34, speech defects were noted for 2 or 3 weeks, and in 16, for three months; 4 lost the singing voice altogether; 26 had better voices after the operation; 5 per cent had difficulty in pronouncing certain words. The defects in the throat were: (1) Pillars seemed to have disappeared; (2) pillars had grown together; (3) anterior pillar had disappeared. In adult patients over 14 years of age, the author uses local anæsthesia, and in those under 14 years, general anæsthesia. In the case of adults, he swabs the throat with a 10 per cent solution of cocaine, and then injects a 1 per cent or a 1.5 per cent solution of quinine bisulphate into the cellular tissue outside of the capsule. A tonsil tenaculum is introduced into the center of the gland and pulled toward the median line until the junction of the mucous membrane and the capsule is brought into view. With a blunt-pointed tonsil knife the mucous membrane around the tonsil is then incised. If this does not evert the tonsil, a nick is made at the upper angle. After the tonsil has been everted, a snare is passed around it, and it is slowly removed.

Sheedy claims that for two years he has not had a single resulting deformity. In only a few exceptional cases was it impossible to evert the tonsil; i. e., (1) where hypertrophy had already caused escape from the capsule; (2) where the capsule was holding within itself a mass of cicatricial tissue; and (3) where the tonsil was held down by cicatricial bands.

A. SPENCER KAUFMAN.

McKenzie, D.: Death after Tonsillotomy. *Proc. Roy. Soc. Med.*, 1913, vi, Laryngol. Sect., 184.

By Surg., Gynec. & Obst.

The author reports a case of simple tonsillotomy (five weeks after an attack of acute catarrhal otitis media) in a child, followed in three days by sepsis with a temperature of 103° and locally signs of cervical

abscess. The local condition was relieved by incision and evacuation of pus, but the next day the child developed violent pain on the left side with increasing respiration, followed by death in 18 hours.

The post-mortem findings showed a double pneumonia and pleurisy, with double empyema; pericarditis and pericardial effusion; and the organism obtained from both the clinical abscess and pleural cavity was *spirochæta dentium*, the organism found usually in the mouth.

It is the author's custom to use a mouth wash of 1 per cent lysoform previous to operation, but in this case it was accidentally omitted.

ELLEN J. PATTERSON.

Oppikofer, E.: Primary Malignant Growths in the Pharynx (Über die primären malignen Geschwülste des Nasenrachenraumes). *Arch. f. Laryngol. u. Rhinol.*, 1913, xxvii, 526.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author reports twenty-one cases; six of carcinoma, six of lymphosarcoma, five of round-celled sarcoma, and three of endothelioma. The age of the patient did not seem to be a predisposing factor for any of these tumors. Almost without exception the prognosis is still hopeless. Of the twenty-one cases, only one, a hyphosarcoma, recovered permanently. This is more hopeful than either carcinoma or endothelioma, and may sometimes be cured by the prolonged administration of arsenic. Retronasal carcinoma can be cured only rarely even by operation. Röntgen treatment was carried out in all of these cases and was frequently followed by temporary cessation of pain. The growths likewise decreased in size for a time but later began to grow again. Fulguration, radium, thorium, and mesothorium only occasionally gave permanent results.

KONJETZNY.

Cocks, G. H.: Vincent's Angina. *Laryngoscope*, 1913, xxiii, 929.

By Surg., Gynec. & Obst.

Difficulty in recognizing the disease is due to failure to have a smear made. The bacilli and spirilla of Vincent do not grow on ordinary culture media. The bacilli and spirilla are found in angina and stomatitis, also in mastoiditis, chronic otitis media, meningitis, abscess of lung, liver, and spleen, also in tonsillar abscess, in the larynx, about the pulp of carious teeth, and in crypts of diseased tonsils.

The fusiform bacilli may be differentiated from diphtheria by Gram's method of staining. Too large a percentage of cases is overlooked. The color of the membrane is gray or grayish in most cases.

Of 265 cases, 99 were diagnosed clinically as diphtheria, whereas the bacteriological report gave only 64 as being diphtheria. Lowered bodily resistance, diseased tonsils, teeth, and gums are the predisposing factors in Vincent's angina. It is a highly contagious disease.

The removal of the membrane in angina leaves

an ulcerated area, which bleeds easily upon being touched. The disease is associated with diphtheria and syphilis and is often accompanied by stomatitis. Blood examinations show a relationship between Vincent's angina and lymphatic leukæmia.

The symptoms of mild cases of angina are: chilly sensations, pain in tonsillar region when swallowing, malaria, slight fever, submaxillary glands on same side usually swollen; duration about two weeks. In severe cases, one or both tonsils, the pharynx, uvula, and soft palate may also be involved; pain and prostration are extreme; temperature from 99.5° to 105°. Duration uncertain. The disease has proved fatal in a number of cases. A differential diagnosis should be made between Vincent's angina and diphtheria, syphilis, and streptococcus anginae. The only sure way for doing this is by bacteriological examination and a Wassermann test.

H. BEATTIE BROWN.

Dennis, F. L.: Diagnosis and Treatment of Laryngeal Tuberculosis. *J. Am. M. Ass.*, 1913, lxi, 1219.

By Surg., Gynec. & Obst.

The author believes that patients with pulmonary tuberculosis should have routine laryngeal examinations in order that any involvement of the larynx may be discovered in its earliest stages.

Primary laryngeal tuberculosis is rare and is not necessarily indicated by hoarseness or laryngitis in tuberculous patients, for such patients may be suffering from catarrhal laryngitis, syphilis, or cancer. Hoarseness is not present unless the ulceration involves the part of the larynx upon which phonation depends. Dennis differentiates between hoarseness and "weakness" of the voice. The latter is due to a "general muscular atony." He attaches no importance to pallor of the mucous membrane, as it varies with the complexion and hæmoglobin percentage and is significant only when localized in the throat. He does consider important, however, a thin line of muco-pus lying in the posterior commissure and extending over the interarytenoid region. Redness of one cord, when the other is normal, is diagnostic of tuberculous laryngitis in a tuberculous patient. Slight infiltration of the epiglottis, thought to be tuberculous, does not always develop the characteristics of tuberculosis. The diagnosis of simple catarrhal laryngitis can be made only by watching its course. Pachydermia of the posterior wall may resemble tuberculosis, but the presence of an ulcer and pulmonary involvement clears the diagnosis. The crusts in pharyngitis sicca may be softened by warm water or oil, and removed. The Wassermann reaction and the use of salvarsan render the diagnosis of syphilis more easy, but there may be a mixed infection. In carcinoma of the larynx, the diagnosis is based upon a lagging of the affected side, the age of the patient, the appearance, the microscopic examination of a piece of the tumor, and the tuberculin test. In unilateral posticus paralysis, tumefaction and infiltration are absent.

Laryngeal tuberculosis should be treated consistently. The author has not observed direct beneficial effect from the use of tuberculin. The cough should be controlled by heroin or codeine. Speech should be limited or entirely prohibited. Painful deglutition should be relieved by the use of orthoform or anæsthesum, or, if the pain is from lesions below the epiglottis, alcohol injections of the superior laryngeal nerve give relief which sometimes lasts for days. When the pain is due to ulceration of the epiglottis, amputation is advised. Locally, for infiltration, the author uses 3 to 10 per cent formaldehyde, thoroughly rubbed in, and for ulceration, a saturated solution of trichloroacetic acid applied every seven or ten days, this in patients with high temperatures, or extensive involvement of the larynx, or who are too nervous for surgical treatment.

In selected cases, surgical measures are best. For isolated tuberculomas, moderate infiltrations, and ulcerations, the author uses a curette, a punch, or a galvano-cautery. Cautery is used in extensive infiltration of the false cords. Surgical measures are indicated also as palliative treatment, and tracheotomy sometimes has a curative as well as a palliative effect.

Dennis concludes that the larynx should be frequently examined, and treated if necessary; that care of the general condition is most important; and that in selected cases surgical measures hold out the greatest hope for cure, as well as for palliation.

A. SPENCER KAUFMAN.

MOUTH

Steadman, F. St. J.: Pyorrhœa Alveolaris as a Predisposing Cause of Cancer of the Alimentary Canal and Associated Parts. *Tr. Internat. Cong. Med.*, Lond., 1913, Aug.

By Surg., Gynec. & Obst.

It is the author's belief that cancer rarely occurs in any part of the body unless it has been preceded by a more or less long-standing chronic inflammation, and that by far the commonest predisposing cause of cancer is a chronic septic condition of the mouth.

Analyzing the 112,801 deaths from cancer in England and Wales during the years 1901 to 1904, he shows that, excluding cancer of the sexual organs, 86.5 per cent in the female and 85.1 per cent in the male sex occurred in the alimentary canal and its associated parts.

To quote the author: "Having seen, then, that elsewhere in the body, in those parts either on the surface or closely connected with an orifice, chronic

inflammations are fairly common owing to the ease with which direct infection can take place, and further that these chronic inflammations seem beyond reasonable doubt, in some cases at any rate, to predispose to the subsequent development of cancer, I determined to investigate the condition of the mouth with regard to that disease known as pyorrhœa alveolaris in patients suffering from cancer of the alimentary canal and the associated parts; because it is clear, and indeed very well established, that the constant swallowing of infective material from the mouth must be likely to produce chronic inflammation of these parts."

In order to study a possible relationship between pyorrhœa and cancer, the author examined the mouths of 143 persons suffering from cancer, finding that all but one of the whole number suffered from pyorrhœa of varying degrees.

Four hundred and fifteen patients of 35 years or over, not suffering from cancer, were examined, with the result that 359 of these were suffering from pyorrhœa of varying degrees.

A further examination of persons of all ages was made in order to establish an age at which pyorrhœa is common. This revealed a gradual and markedly increasing tendency up to 85 years. From these studies of many cases of cancer and of many pyorrhœa cases the author constructed a graph showing a curve which was parallel to the curve showing the death rate from cancer in England and Wales.

The author is convinced that pyorrhœa alveolaris is by far the commonest predisposing cause of cancer of the alimentary tract. To sum up this evidence we see:

1. That, apart from the sexual organs, over 86 per cent of all cancer occurs in the alimentary tract.
2. That long-standing chronic inflammation in the sexual organs, and in other parts of the body, is known to predispose the patient to the development of cancer.
3. That the great majority of persons suffering from cancer in the alimentary canal have advanced pyorrhœa alveolaris, which has been present very many years.
4. That this advanced periodontal disease is not nearly so common in persons not suffering from cancer.
5. That it is a well-known fact that the constant swallowing of pus can, and does in many cases, bring about chronic gastritis.
6. That the majority of patients suffering from cancer of the stomach have had chronic gastritis for many years previous to the development of the malignant disease.

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SURGERY OF THE HEAD AND NECK

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SURGERY OF THE EYE AND EAR

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INTERNATIONAL ABSTRACT OF SURGERY

FEBRUARY, 1914

MONTHLY COLLECTIVE REVIEW

THE NATURE OF SHOCK

A CRITICAL ABSTRACT

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WITHIN the past year or two, America has lived through a renaissance of the shock problem — a renaissance activated by the advancement of a new theory and a new type of therapy. This new line of therapy is emphatically prophylactic, rather than specific, and rests on the basis of intricate, detailed studies in cytology. It is essential that this new statement of the shock problem should be subjected to a searching critique; and such a critique necessitates passing in review all previous work done along this line. That such a necessity confronts us will be apparent when we consider that for nearly a century investigators and clinicians have been propounding theories and promulgating doctrines that definitely located the cause of shock in an aberration now of this function or organ, now of that. Without exception none of these various theories has stood the tests of searching criticism. It is rational to hope, therefore, that by passing the various older working hypotheses in review, we may at least partially comprehend why they have failed, and likewise orient ourselves in a suitably critical attitude regarding the strength and weakness of the new theory.

The word "shock" was first used clinically in the latter part of the eighteenth century. Up to that time there was no single word to express the notion of grave organic compromise following trauma and unaccompanied by demonstrable organic changes. The ancients, who were not unfamiliar with the symptom-complex, had dismissed the problem by referring the causative

agency to some *deus ignotus*; but as medicine became less and less mystic, and as causal relationships began to be more and more firmly founded, the shock problem gradually came into its own and demanded explanation.

In a previous paper, written before the birth of the newest theory of nerve-cell excitation, I pointed out the interest attached to the facts that the theory of vasomotor exhaustion in shock had been put forward by Keen and Mitchell in 1864, then forgotten, and again brought forward by Crile in 1900; that the theory of reflex inhibition which had been formulated by Leyden in 1870 was lost to view, and then revamped and restored by Meltzer in 1908; that the theory of primary cardiac involvement had been developed *in extenso* by Blum in 1876, had lost caste, and was then rehabilitated by Boise in 1908. In view of all this, there is a certain amount of fascination in the knowledge that our latest theory of inordinate excitation of the nervous cellular mechanism was anticipated, purely on prior grounds, by Travers in 1827, and that Travers' reasoning was further supplemented by Sir Astley Cooper in 1835. Obsequies and resurrections have never been quite as frequent as this in any other surgical field.

And how may we explain this constant change of front? On two grounds: In the first place a failure to recognize what was so clear to the elder Gross, namely, that "shock is a rude unhinging of the entire machinery of life," and that we must therefore proceed cautiously in attempting to

locate the unhinging at the door of any one particular organ or function. Secondly, we find an explanation for the multiplicity of theories in the frequent misinterpretations of experimental data or in the drawing of unwarranted conclusions from properly collected data. For example, to take up the most common type of confirmed faulty reasoning, almost every investigator of shock develops his line of thought around the central point that low blood pressure signifies shock. And so indeed it does, but it has never been proved and should never be assumed that low blood pressure is the primary causative agency of shock. Blood pressure readings are to shock what thermometric readings are to a summer day. One tells us the degree of pressure, and the other the degree of heat, but what causes the rise or fall of pressure or the greater or lesser heat—that is another problem. And yet, as one goes through the literature of shock, it is necessary to battle against the conclusions that low blood pressure either causes shock or is synonymous with it.

The needs of more specific criticism make it imperative to deal critically with the development of the more commonly accepted theories of shock, as we know them today. In order to do this we shall select for analysis the following prevalent doctrines regarding the causative factor in shock, which is stated variously to be:

1. Vasomotor exhaustion and paralysis.
2. Cardiac spasm and eventual failure.
3. Inhibition of the functions of all the organs.
4. Deficiency of carbon dioxide in the blood (apapnia).
5. Morphologic changes and eventual partial or complete disintegration of the ganglion cells.

The theory of vasomotor exhaustion as the essential cause of shock was established on what seemed at the time to be a firm basis by Crile. His argument is based on the facts "that the essential phenomenon of shock is low blood pressure, and that since there is no demonstrable lesion in fatal cases, and no later effects in those that recover, we must assume exhaustion rather than structural lesions to be the cause of this fall." This exhaustion may be resident in the cardiac muscle, cardiac centers, blood-vessels, or vasomotor centers. The heart is not exhausted, for in profound degrees of shock, if the pressure be raised artificially, the heart will be found to be competent; the cardio-inhibitory center is not exhausted, for it responds to stimulation during active shock; the cardio-accelerator center is not only not exhausted but is active up to the time of death; furthermore, shock occurs

even when the heart is isolated from the nervous system by severance of the vagi and accelerantes. Since we may exclude the heart as an essential factor in shock, we must look to the loss of peripheral resistance as the essential factor. The peripheral nerve-vascular mechanism is not exhausted, for it invariably responds to an intravascular injection of adrenalin; therefore it must be assumed that the vasomotor centers themselves are exhausted, and this assumption is confirmed by the fact that, in shock, these centers do not respond to electric stimulation of peripheral nerves, to severe trauma, to physiologic doses of strychnine, or to deep asphyxia.

In essence, this theory asserts that the vasomotor centers are exhausted and that therefore the peripheral vascular system is toneless and relaxed. In Crile's own experiments there are many data that may be used to prove his conclusions not entirely warranted. But rather than enter into a prolix criticism of data, it probably will be more interesting to state the various grounds on which later investigators have attacked the vasomotor exhaustion theory. In England, the war was opened by Malcolm, who, on purely clinical grounds, contended that the vasomotor centers were active throughout shock, and that the peripheral vascular system was contracted rather than relaxed. He argued to this conclusion from the facts that, in shock, the surface of the body is cold, the skin pale, the pulse small, the mucous membranes blanched, and the bleeding from surface wounds scanty. This carefully worked out clinical argument created a storm center, with Malcolm against Mummery in the vortex. As a matter of fact, the argument degenerated to the level of rather bitter polemics; and this despite the delightfully suave and well-pointed compromise suggested by Sheen, who showed that Malcolm had failed to take into consideration that, in shock, an unduly large proportion of the blood is in the abdomen, and that as a natural result, the peripheral vessels are small; being neither dilated nor contracted, but rather passively "retracted." This was a wise observation of Sheen, too scantily noted by all investigators of the shock problem. Crile himself pays practically no attention to the abdominal venous engorgement (veno-pressor disequilibrium of Henderson), and some of my own experimental work, despite its fairly general acceptance, is open to serious criticism on account of failure to realize that the altered distribution of the blood in shock must be taken into consideration at all stages of every experiment.

The vasomotor exhaustion theory has also been

attacked directly by the physiologists, Porter, Henderson, and Lyon, and indirectly by numerous other investigators who bring forward theories of their own—Vale, Kinnaman, Schur, Weisel, Bainbridge, and Parkinson. Porter, working alone and with Quimby, showed that the central end of the sciatic could be stimulated for hours without causing a fall of pressure. Furthermore, they found that when an animal was in extreme shock the vasomotor centers nevertheless responded to electric stimulation, thus demonstrating that exhaustion of these centers could not be predicted. Porter furthermore called attention to the fact that we must consider fluctuations of blood pressure not from the absolute but from the percentage point of view.

Tyrell, Gray, and Parsons made the important suggestion that simply because an animal in shock does not show a rise of blood pressure on stimulating or traumatizing a certain part of the body does not prove that the vasomotor centers are exhausted. It may be probable, they say, that the pain impulses may have exhausted the synapses in the path from the part stimulated to the center, and that the vasomotor centers themselves are intact.

Henderson believes that in shock "the vasomotor center does its full duty almost to the last," that failure of the circulation is due to the diminution of the volume of the blood, by transudation of its fluid out of the vessels into the tissues, and that there is no "fatigue or inhibition or failure of any sort in the vasomotor center." Henderson noted in his experiments that his dogs usually died "of respiratory failure, long before arterial pressure had fallen to such an abnormally low level as would accord with Crile's definition"; he shows further from Crile's protocols that respiratory failure was a strikingly important phenomenon, and on the basis of this observation he not only denies the possibility of vasomotor exhaustion but also works out his own theory of acapnia. In part, he supports his arguments against vasomotor exhaustion by the conclusions of Seelig and Lyon.

Seelig and Lyon, in two papers, contest the validity of the doctrine of exhaustion of the vasomotor centers. In their first paper they measured the outflow of blood from the femoral vein in a normal dog, before and after section of the sciatic nerve. After section of the nerve the outflow was more rapid, as was to be expected. This same experiment was performed on a dog in shock, and despite the shock the outflow was more rapid after section of the sciatic, even more rapid, proportionally, than in the normal dog,

thus demonstrating that the vasomotor center was transmitting active tonic impulses through the sciatic, even in a state of profound shock. Moreover, by ophthalmoscopic examinations they determined that the arteries of the retina not only did not dilate, but rather that they actively contracted as the animal went into shock. As joint author in this work, it is only fair for me to state that Erlanger contests our reasoning as regards rate of outflow, and also that we should have proven, but did not, that the contraction of the retinal vessels is really an active, tonic contraction and not a passive one due to empty vessels. In a second paper, Seelig and Lyon attack the problem from a different point of view. They emphasize the fact that in normal animals stimulation of the central end of the cut vagus causes a rise of blood pressure, and that this rise occurs even when the animals are in the profoundest degree of shock. Furthermore, utilizing Porter's doctrine of percentage rise, they found that the rise was proportionally as high in profound shock as in the normal animal. In order to exclude all reflex effects on the heart, they cut both vagi and removed the right and left stellate ganglia; but even after these procedures, stimulation of the central end of the vagus was followed by a rise in pressure. These authors conclude from their experiments that the vasomotor centers are active in shock.

Shortly after the publication of Seelig and Lyon's work, Bartlett, by measuring the rate of inflow of saline solution into the femoral vein, reached the conclusion that during shock the vessels were relaxed and that the tone of the vasomotor centers was decreased (not exhausted). Bartlett, however, does not seem to have sufficiently controlled the question of collateral circulatory phenomena nor the question of the escape of the injected salt solution from the smaller arterioles of the extremity experimented upon.

All in all, the weight of evidence seems to be that the vital vasomotor center, a center controlling a so-called "fundamental" function, does not exhaust as easily as the doctrine of Crile presupposes; indeed it would seem that it is one of the last centers to break down in shock.

The failure of the vasomotor exhaustion theory to account satisfactorily for the condition of shock naturally led to the propounding of other theories. Of these, none has made a stronger appeal to the clinician than the doctrine that cardiac failure is the essential element in the obscure symptom-complex—a principle laid down most emphatically by Boise, although Howell also admits cardiac

shock, as well as vascular shock. Boise, who bases his views largely on the experiments of Crile, Howell, and Porter, attempts to prove that as a result of excessive stimulation of the augmentor nerves of the heart (due to peripheral trauma) this organ is thrown into spasm; that, therefore, in shock there is increased systole, decreased diastole, lessened output of blood from the heart, and therefore low blood pressure. The lowered blood pressure in its turn leads to further decrease in the output, establishing, as it were, a vicious circle. By administering veratrine to shocked animals, Boise claims to have remedied the condition of shock markedly, by causing a decrease in systole, an increase in diastole, and a slowing of the pulse rate. Unfortunately, Boise's argument cannot be accepted. He fails to take into consideration the existence of depressor impulses, he fails to realize that the cardiac output is necessarily limited owing to the fact that the splanchnic venous area is engorged, and furthermore he has not explained away the work of the numerous investigators who have thoroughly isolated the heart from all afferent paths and still been able to induce shock. The heart is compromised in shock, beyond a doubt, but cardiac inefficiency is certainly not the primary cause of shock.

Meltzer, it was, who developed in his characteristically lucid fashion the doctrine of inhibition of functions as the underlying essential phenomenon in shock. Meltzer contrasts the views of Crile with those of Howell, who believes that the vasomotor centers are not exhausted, but that the prominent factor is an inhibition of the centers in the medulla. He then shows that Porter also disagrees with Crile, but that the two physiologists, Porter and Howell, disagree also. He then advances his own argument, which is based upon experiments performed primarily in an investigation of peristalsis. Meltzer ventures the assumption that the "various injuries which are capable of bringing on shock do so by favoring the development of the inhibitory side of all the functions of the body. This predominance of inhibition makes its appearance at first in those functions which are of less immediate importance to life, and are therefore, less insured by safeguards protecting their equilibrium. With increased injury, the inhibition also spreads to the more vital and better protected functions of the nervous system." Meltzer is careful to specify that he considers inhibition only as a primary effect, and that, during shock, other influences must become secondarily active, so that "anæmia, asphyxia, or even fatigue might become opera-

tive, during the progress of shock." Such a doctrine as this serves well as a physiological hypothesis, but to the clinical mind searching for light it is not very satisfying. The argument as to exactly what the term inhibition connotes is not definitely settled, and therefore one hardly feels satisfied to appropriate inhibition as a cause. In a very recent contribution, Short refers to Meltzer's conception as "an abandonment of the problem."

The doctrine of acapnia, viz., that shock is due to a deficiency of carbon dioxide in the blood, was enunciated by Henderson within the past decade, and for a time stimulated much work and much criticism. Henderson argues that the traumata that induce shock cause rapid deep breathing (hyperpnœa) as the result of pain or excitement. This rapid deep breathing in its turn causes an undue ventilation of the lungs, during which ventilation, carbon dioxide is rapidly swept out of the circulation. Furthermore, when viscera are exposed, in an ordinary laparotomy, carbon dioxide is exhaled from their surfaces, thus lessening the quantity of this gas in the blood. By blood gas analyses, Henderson claims to have proved this primary contention beyond a doubt. Now carbon dioxide is not, as it is so commonly regarded, merely a poisonous excretion. It is an important regulatory hormone, upon whose presence, for instance, the activity of so vital a function as respiration depends. Henderson shows that it is possible, by excessive artificial respiration alone, to induce a state of shock that will be followed by death in a few hours, and conversely, that a state of shock may be warded off by increasing the so-called dead space of the respiratory tract, thus conserving the carbon dioxide content of the blood.

Henderson's explanation of low blood pressure in shock has been concisely summarized as follows: When there is a reduction of carbon dioxide in the blood, the walls of the veins relax, the pressure in them falls, blood accumulates in them, and only a small amount is transmitted to the heart. Constriction of the arteries may for a time maintain a fair blood pressure. At last the supply reaching the right auricles becomes so reduced that arterial pressure falls, the heart beat becomes quick, the output is small, and severe shock is established. Deficiency of carbon dioxide has another remarkable effect. When the deviation from normal is considerable there is a tendency for fluid to exude from the plasma into the tissues. The plasma therefore becomes concentrated and the total volume of blood diminished. Early in the course of shock, an

intravenous infusion is remedial; later on it fails, because the fluid merely escapes into the tissues. Henderson emphasizes and re-emphasizes the phenomenon of venous pressure disequilibrium which leads to a subnormal venous return to the heart, the final fall in arterial pressure being dependent upon the consequent reduced output of the heart, and in no sense upon an exhaustion of the vasomotor centers. If, in a state of profound shock, stimulation of sensory nerves does not result in a rise of pressure, it is because there is so small a quantity of blood circulating and so large a quantity stored in the intra-abdominal veins. Henderson credits the experimental evidence that claims venous pressure to be regulated by the carbon dioxide content of the blood rather than by the nervous system; so he sees in the venopressor disequilibrium another bit of evidence in favor of acapnia as the primary cause of shock.

What may be said in criticism of this doctrine of acapnia? First and foremost, that, clinically, we do not encounter the phenomenon as outlined by Henderson. It is rare to see hyperpnoea so prolonged as to ventilate the lungs excessively, and secondly, the modern surgeon does not expose viscera in such fashion as to permit extensive exhalation from them. From the purely scientific point of view of the physiologist the doctrine of acapnia was actively attacked at the meeting of the American Association of Physiologists two years ago. Howell showed by perfusion experiments that the heart will beat in complete acapnia. He used perfusing fluids that contained absolutely no carbon dioxide. Erlanger subjected the figures of Henderson's blood gas analyses to close examination and demonstrated that, by Henderson's own figures, some of his animals in shock did not show a reduced blood content of carbon dioxide. Erlanger furthermore emphasized the fact that the quantity of carbon dioxide in the blood was not even approximately as significant or important as was its tension; and yet Henderson practically ignores the question of tension. Short attempted to check up Henderson's views by determining the carbon dioxide content of the blood in normal individuals and in shocked patients. As a result of his determinations he came to the conclusion that acapnia is not the primary factor in shock. In five normal individuals he found that the carbon dioxide content of the blood was 46.4 per cent, whereas in five shock cases the carbon dioxide content was 46.9 per cent. Seelig attacked the problem from the following point of view: If shock be primarily due to acapnia, which in its

turn leads to low blood pressure, then it seems reasonable to assume that by supplying the blood directly with an increased quantity of carbon dioxide gas we should be able to avert shock, or at least to restore blood pressure after the process of shock had started. Seelig found that, with ordinary care, he could safely introduce carbon dioxide gas directly from a generator into the femoral vein of an animal. He found furthermore that by thus directly increasing the carbon dioxide of the blood he could not influence the course of shock. The conclusion that acapnia does not suffice as a cause of shock therefore seems to be inevitable, even despite the large quantity of data so carefully collected by Henderson over so long a period of time.

Finally, we come to the last of the theories which we have undertaken to review, a theory which has been styled by its propounder, G. W. Crile, "the exhaustion hypothesis." This hypothesis assumes "that animals that are especially capable of being shocked are those whose self-preservation is dependent upon special forms of motor activity; that motor activity is excited by adequate stimuli, through nerve tissue directly. Whatever may have been the origin of the motor mechanism and its adaptive response on stimulation, there is in each individual, at a given time, a limited amount of potential energy; that motor activity following each adequate stimulus diminishes the amount of this potential energy; that in any animal, a sufficient number and intensity of the stimuli leads inevitably to exhaustion or death; that when the motor activity takes the form of obvious work performed, such as running, the phenomenon expressing the depletion of the vital force is termed physical exhaustion; and that when the expenditure of the vital force is due to stimuli which lead to no obvious work performed, especially if the stimuli are strong and the expenditure of energy rapid, it is designated as shock."

In support of this hypothesis Crile arrays his evidence with the purpose of showing that "the phenomena of exhaustion from physical exertion closely resemble shock; that shock may be acute or chronic; that in shock every organ of the body exhibits certain evidences of pathologic physiology; that recovery from shock often takes a long time; that fear and trauma have a common phylogenetic origin and are akin; and that in the brain cells there is found a physical basis of shock.

Of all this evidence, that which concerns demonstrable changes in the brain cells is the one that commands most interest. The relationships between exertion and exhaustion, and fear and

trauma, the participation of all the organs in evidencing disturbed function, the long duration of the after effects of shock, all these may be regarded as commonly accepted facts; but a demonstrable, constant, morphologic alteration of the brain cells as the primary cause of shock is an entirely new idea.

Crile has experimented with states of acute and chronic emotional excitement, with pyogenic infections, with the effects of various drugs and anæsthetics, with trauma, with vascularly anastomosed dogs, with spawning fish and hibernating animals, with hæmorrhage, senility, trauma, and numerous other states and conditions. Brain-cell studies were made following all of the experiments. The cells studied were almost entirely those of the cerebellum (Purkinje cells) and they were studied from the following points of view: the size of the cells, the amount and the physical condition of component parts of the cells, the number of cells in a field, and the intervening granular cells. The results of these cytologic studies may be summed up in Crile's own words as follows, "Whether as a result of disease, of injury, of drugs, or of emotional stimulation, the physical state of the brain cells corresponds closely with the state of vitality—not only the state of vitality as a general term, but also the state of such functions as cerebration, digestion, muscular power, respiration, circulation, disturbance of metabolism, of excretion—in short, of most of the bodily functions. Then, too, both in animals and in man, the physical condition of the brain cells was apparently a good index of the extent of surgical operation that could probably have been endured. In old age, for example, the total number of cells is much diminished; so too is the vitality and the ability to endure surgical operations, emotional stimulation, or disease."

The essence of the doctrine lies in the belief that the brain cells are composed of labile compounds capable, when adequately stimulated, of converting their potential energy into kinetic. If this power to convert is unduly excited and the cells immediately fixed, stained, and studied microscopically, they show what seems to be a deep overstaining due to an overproduction of Nissl substance. If the excitation is continued, the cells stain much lighter and show an altered relation between cytoplasm and nucleus, as well as altered form; finally, if the excitation is continued further, the cells take practically no stain (loss of Nissl substance) and are altered in form up to the point of actual disruption. (See Note.)

Here then is a new problem confronting us. How are we to estimate this new theory? This

much is certain—Crile and his assistants have spent years studying and measuring brain cells under given conditions; as a result of these studies Crile enunciates certain facts, from which facts he reaches a general conclusion. In order to controvert this conclusion, it is necessary to controvert his facts or to show faulty logic in his process of deduction. The facts as they stand are merely confirmations of similar facts made by such trustworthy workers as Hodge, Hertwig and his school, and Dolley. No one has brought forward concrete data in rebuttal. As regards faulty deduction, two important questions arise, namely, possible artefact formation and the difficulty of logically correlating the morphology of cells with corresponding variations in their function. Regarding possible artefact formation, Crile explains that the cell pictures he describes are so consistent and so invariably present as to throw the question of artefact formation out of court. As regards the inherent difficulties of associating cell morphology with function, we need only remember for how long a time we have been able to demonstrate morphological cell changes in the parenchyma of the gland cells of the digestive tract, varying with states of functional activity. Crile quotes, all too scantily, from the work of other investigators whose conclusions would greatly strengthen his own thesis. Dolley, who seems to have done admirable work, has admitted that his deductions rest upon the established doctrine of Hertwig regarding the relation of the plasma to the

Note.

The exact changes which occur in the ganglion cells are given by Dolley as follows: "As a result of continued activity, there is first a steady increase of the basic chromatic material, first the extranuclear (the Nissl substance), then the intranuclear, which is attended by an increase in size of the cell. Finally an intensely hyperchromatic cell marks the maximum of elaboration of basic chromatin. From this point it begins to disappear, first from the nucleus, as it continues out into the cytoplasm, then from the cytoplasm, resulting as the next stage in a cell still relatively though more irregularly hyperchromatic. Accompanying the disappearance of chromatic material is a marked shrinkage in size, relatively greater for the nucleus than for the cell, with extreme irregularity and actual crenation of contour of both. The result is that the relation of nucleus to plasma changes in favor of the cytoplasm. There are two main types of such cells, the one attenuated, spindle-like, the other more of the usual pear-shape of the Purkinje cell. Toward the end of both these stages a sharp increase in the size of the nucleus, due to oedema, occurs, which helps to fix their relation to the succeeding stage. The advance of the nuclear oedema, its later onset in the cytoplasm, and the still continued using up of the extranuclear chromatic material result in a cell having the semblance of normal with an average amount and almost normal distribution of basic chromatic material, now well rounded out, but exhibiting nearly a maximum disproportion between nucleus and cell body, and that in the opposite direction, that is, in favor of the nucleus. The using up of the chromatic material proceeds until it almost or entirely vanishes from the cytoplasm, whereupon there is an extraordinary discharge from the nucleus, which first masses about the nuclear membrane and gradually diffuses into the cytoplasm. Though the absolute size of both cell body and nucleus steadily increases through these stages to the end, at this point the relation between them changes, and from being in favor of the nucleus it shifts again to the advantage of the cytoplasm, which indicates the onset of nuclear exhaustion. With the using up of the secondary supply thus afforded, the karyosome alone remains of basic chromatic material. Finally the karyosome yields up its ultimate supply, and after its diffusion into the cytoplasm and consumption there, there results a functional exhausted cell, entirely devoid of basic chromatin."

nucleus in the cell. If this doctrine of Hertwig is invalid, then all the work on brain cells must fall. Dolley has, in a spirit of scientific enthusiasm, gone into the intricate problem of excitation and depression as elaborated by Hertwig, and he has added his quota of proof to demonstrate the absolutely fundamental fact that all the afferent brain impulses are qualitatively identical and differ only quantitatively. And right here is where his work contrasts sharply with that of Crile. Dolley is unconcerned with the demonstration of practical clinical conclusions, except in so far as they fall naturally from the work bench, whereas Crile is concentrated on demonstrating a practical method; and in his very attempt he seems to miss the point that he aims for. He admits, without so stating specifically, the qualitative similarity and quantitative differences of all afferent stimuli. He demonstrates that fear, trauma, activity, senility, and numerous other states induce brain-cell changes exactly similar to those of shock. He thereby links shock with a conglomerate group of other entities all the while that he is striving to isolate it. Possibly the statement that he desires to isolate shock as an entity is a misstatement, but Crile's whole line of thought and his general conclusions warrant the belief that he is striving to determine the etiological factor underlying shock as a definite symptom-complex.

This much is certain—whatever the theoretical significance of brain-cell changes in shock may be, the practical significance of the doctrine as worked out by Crile is colossal in its imperative emphasis on the necessary qualifications of an operating surgeon—thoughtfulness, deliberateness, gentleness, and dexterity. However, in thus appraising the work of Crile, let it be clearly understood that we are setting a value only on the practical consequences flowing from it, rather than on the inherent validity of the doctrine itself. Crile's hypothesis of exhaustion, conceals a very definite speciousness in its appeal to surgeons, for the operating surgeon, of all others, is the one therapist who always has it in his power to control the quantity of noxious afferent impulses. It is in his power always to make his operative attack an onslaught or a more or less gentle reparative procedure. If it be an onslaught the patient may die of shock, and if the patient dies of shock, what is more natural than to attribute the death to undue ganglion cell exhaustion?

Surely it is not unfair to point out the speciousness of an argument that sets out to explain a symptom-complex on the basis of a definite causative agency, and then proves that this same

causative agency is at bottom the cause of practically all disease. "Environment drives the brain, and the brain drives the various organs," is a statement quoted by Crile. True, surely, but not very specific as applied to shock. Furthermore, our criticism is not unfair, for Dolley, in commenting upon the analogy between anæmia and shock (an analogy which both he and Crile support) says that "though undoubtedly true in its essentials, absolute proof for the induction is not to be found in known data at present." The theory that ganglion-cell excitation and exhaustion are the primary cause of shock stands as a type of solidistic pathology. Virchow has characterized all solidistic theories in pathology (as contrasted with humoral theories) as metaphysical and speculative; and in this statement by Virchow resides the crux of the problem. Crile may encounter no difficulty in showing that the condition of shock has a definite morphological representation in the ganglion cells of the cerebellum, but he frequently approaches dangerously near the border line of speculative metaphysical reasoning in his attempts to prove that these same morphological changes are the prime cause of shock.

And thus the problem stands—still unsolved.

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ABSTRACTS OF CURRENT LITERATURE

GENERAL SURGERY

SURGICAL TECHNIQUE

ANÆSTHETICS

Coburn, R. C.: *The Importance and Prevention of Respiratory Obstruction During General Anæsthesia in the Inhalation Methods.* *Am. J. Surg.*, 1913, xxvii, 361.

By Surg., Gynec. & Obst.

The author's aim is to draw attention to the prevalence and importance of obstruction in the upper respiratory tract in anæsthesia by the inhalation methods. The lower part of this tract is a reservoir of ample size to accommodate ordinary variations in demands for pulmonary ventilation; while the upper part is chiefly for conduction and only of sufficient size for the passage of necessary air currents. Therefore the serious embarrassment to respiration by even the slightest encroachment upon these upper passages by any obstruction, as growths or deformities; swelling from venous congestion, excessive mucus, the tongue falling over the larynx, etc. Nitrous oxide doubles the pulmonary ventilation and reduces the caliber of the conducting passages, which, continuing, makes a vicious circle, more air being demanded and less admitted. A high Trendelenburg position is an added hindrance and a serious load to a heart and other circulatory organs already overworked. Restriction of respiration may be gauged by the amount of oxygen used, for diminished ventilation means more oxygen. Under ether, similar difficulties are met, but here the method by insufflation substantiates its claim of lessened shock and easier breathing. All methods of vaporizing the ether remote from the patient and conducting it to a terminal anywhere in the respiratory tract should be called, as certain writers have claimed, insufflation, which is prominently distinguished from inhalation by less irritation and congestion in the upper air passages, hence, less respiratory restriction, a quieter respiration, less shock, and less vomiting. This indicates clearly that inhalation methods are characterized by more or less respiratory restriction, which increases respiratory effort and devitalizes the patient. The distinctive benefits of insufflation, less obstruction, even administration, and warm vapor, should be attained in a proper administration by inhalation. To this end curved tubes have been devised, one of metal by Connell and one of rubber by the author; the only objection ever made to them has been the possible entrance of liquid ether into the pharynx when used with the open mask, but this can be avoided. In conclusion, the anæsthetist's success

depends upon observation of details, and an important detail neglected daily in many operating rooms is this prevention of obstruction in the upper air passages.

FRANK W. PINNEO.

Jackson, C.: *Technique of Insertion of Intra-tracheal Insufflation Tubes.* *Surg., Gynec. & Obst.*, 1913, xvii, 507.

By Surg., Gynec. & Obst.

From the viewpoint of a laryngologist, the author describes the technique of the exposure of the larynx with the direct laryngoscope, giving illustrations of the various steps in the procedure. He sums up the most important points to be observed as follows:

1. The patient should be fully under the anæsthetic by the open method so as to get full relaxation of the muscles of the neck.

2. The patient's head must be in full extension, with the vertex firmly pushed down toward the feet of the patient, so as to throw the neck upward and bring the occiput down as close as possible beneath the cervical vertebræ.

3. No gag should be used, because the patient should be sufficiently anæsthetized not to need it, and also because wide gagging defeats the exposure of the larynx by jamming down the mandible.

4. The epiglottis must be identified before it is passed.

5. The speculum must pass sufficiently far below the tip of the epiglottis to prevent the latter from slipping.

6. Too deep insertion must be avoided, as in that case the speculum goes posterior to the cricoid, and the cricoid is lifted, exposing the mouth of the œsophagus; which is bewildering until sufficient education of the eye enables the operator to recognize the landmarks.

Babcock, W. W.: *Spinal Anæsthesia in Gynecology, Obstetrics, and Abdominal Surgery.* *J. Am. M. Ass.*, 1913, lxi, 1358.

By Surg., Gynec. & Obst.

Babcock discusses the history, the physiological action, his personal experience in 3,053 cases, and the technique of administration, of spinal anæsthesia. The substance chiefly employed was stovaine; although cocaine, alypin, and eucaine lactate were also used in a small number of cases; tropocaine and novocaine were each used several hundred times.

Under spinal anæsthesia, the abdominal walls are relaxed, abdominal breathing is largely abolished, the anal sphincters relax, and the gaseous and liquid

contents of the large intestines escape; the intestinal tube contracts and shows active peristalsis. The ileus is usually promptly relieved by the injection except in certain forms of mechanical obstruction. The stomach, in some degree, shares in the peristaltic stimulation and nausea is often noticed. Urinary secretion is distinctly diminished as a result of lowered blood pressure. A fall in blood pressure and a slowing of the pulse occurs, decreasing gradually to zero at the wrists, the higher the dorsal nerve-roots become involved. The hypotension favors cardiac arrest in certain forms of myocardial disease, as well as in thoracotomy and other operations causing sudden changes in intrathoracic pressure.

In aneurisms, threatened decompensation, in valvular diseases, in the excessive tension of eclampsia, in labor, nephritis, and advanced arteriosclerosis, the vaso-relaxation of spinal anæsthesia may be protective. Therefore spinal anæsthesia should be used with care or avoided in conditions of marked hypotension, while it is indicated in forms of hypertension. Spinal anæsthesia should not be used in severe shock, although it prevents to a remarkable degree the production of shock by operative procedure carried out under its influence. The best antidote for the fall in blood pressure is the intravenous injection of a physiological salt solution, containing from two to ten drops of epinephrin to every six ounces of salt solution, the flow being interrupted as soon as the pulse returns to the wrist.

The respiratory movements diminish according to the degree of paralysis of the respiratory muscles. If artificial respiration is necessary, it can conveniently be carried out by rhythmic compression of the thorax or by forced artificial respiration. Uterine contractions continue under the anæsthetic, but being without the aid of the voluntary expulsive forces they are as a rule inefficient.

Spinal anæsthesia is of chief value when its application is based on its peculiar physiological action and when it is used in conditions that render the use of other anæsthetics dangerous. Babcock has used the anæsthetic in 128 cases of operations on the stomach, in 173 cases of operations on the liver, gall-bladder, and ducts, and in 321 cases of operations for acute pancreatitis, on the spleen, omentum, and mesentery. In about 80 per cent of these operations on the upper abdomen, narcotics have been used in addition to the spinal anæsthesia, and in about 10 per cent, the action of the spinal anæsthesia has been supplanted by the use of ether. It is more difficult to produce spinal anæsthesia in the upper abdominal segments.

Spinal anæsthesia has been used in 829 operations on the appendix, 129 on the intestines, 502 herniotomies and operations on the abdominal wall, in 307 abdominal operations on pelvic organs, and 254 vaginal operations involving the peritoneal cavity. It has its chief value in operations involving the segments of the lower abdomen and pelvis. Babcock obtained a mortality in operations on the appendix of 1.8 per cent in a series of 220 consecutive

and unselected operations, irrespective of the degree or duration of any associated peritonitis. He has had little trouble from post-operative tympany and recalls no instance where operation was required for post-operative ileus. Spinal anæsthesia was used in 107 operations on the kidney and in 54 on the bladder. It has a special value in such operations. It also gives very satisfactory relaxation of the perineal muscles and was used in 543 plastic operations and in procedures involving the rectum and genitalia. A summary of 303 obstetric operations is given, 173 of the cases being reported by Applegate and 109 cases by Steel, in none of which were diminution of uterine contraction, post-partum hæmorrhage, or other ill effects observed. Spinal anæsthesia has the advantage in obstetric practice of producing no ill effects on children. In conclusion, a description of technique is given.

HENRY SCHMITZ.

Gellhorn, G.: *Local and Spinal Anæsthesia in Gynecology and Obstetrics. J. Am. M. Ass.*, 1913, lxi, 1354.
By Surg., Gynec. & Obst.

Preparation for any anæsthesia should begin at least a day prior to the operation. Nervous patients should receive bromides, valerian, or other sedatives as soon as they enter the hospital. Veronal should be given on the evening preceding the operation, morphine-atropine, or morphine-scopolamine should be administered hypodermically half an hour before beginning the operation. Before the patient enters the operating room, his eyes are covered by a mask, and his ears filled with cotton saturated with olive oil. For the local infiltration anæsthesia, a 1.25 per cent solution of novocaine-suprarenin is used. It is possible to perform a number of minor gynecological operations without danger and discomfort to the patient, such as dilatation of the cervix, curettage, trachelorrhaphy, amputation of the cervix, discission of the os uteri, excocleation of cancer, and repair of a vesicovaginal fistula. Local anæsthesia also is used in incomplete abortions, to empty the uterine cavity, and in induction of labor, by means of bags.

For the spinal anæsthesia, Gellhorn uses 2 ccm. of a 10 per cent novocaine solution which contains 5 drops of a 1:1000 solution of suprarenin. The fluid is introduced in the space between the third and fourth lumbar vertebræ. The analgesia lasts, as a rule, from one to one and a half hours. Gellhorn used spinal anæsthesia in 63 operations, among which were 37 laparotomies and 14 vaginal operations. In 2 cases, spinal anæsthesia was attempted but not carried out. The age of the patients ranged from 17 to 64 years. Of these 63 operations, analgesia was insufficient in one case of a complete tear with exophthalmia. In 3 other cases it was imperfect. In 6 of the remaining 47 cases a few whiffs of ether had to be given, the patients being either too nervous or the time of operation too extended. In 41 cases there was a complete absence of pain.

One of the complications arising during analgesia is collapse, which is usually overcome by strychnine and inhalations of oxygen. Vomiting takes place in a large number of cases, but it is, in most cases, transient. All post-operative phenomena occur in mitigated forms and the resisting power of the organism is not reduced. Backache, lasting one or two days, was noted in five of the cases.

Gellhorn employs spinal anaesthesia in all cases in which cardiac or pulmonary lesions contra-indicate inhalation narcosis; also in patients whose general condition is so weakened either by sickness or age as to render any operation more or less hazardous, and in complicated conditions in which a severe and tedious operation can be foreseen. The list of contra-indications includes fever of unknown origin, sepsis, lesions of the central nervous system, syphilis, pressure points along the spinous processes, arteriosclerosis, hysteria, great nervousness, and prejudice against the method.

Spinal anaesthesia presents many undeniable advantages over inhalation narcosis and seems to offer an element of safety which would add greatly to the achievements of modern surgery, particularly in the field of gynecology.

HENRY SCHMITZ.

Molinari: Cause of Paralysis During Anaesthesia (Beitrag zur Ätiologie der Narkosenlähmungen). Berlin: Mittler & Sohn, 1913.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

According to Molinari, paralyzes occurring during anaesthesia are mechanical. There are only a few cases known where the cause was hysteria or a hemiplegia arising during anaesthesia. Anaesthesia can only play a contributory part by eliminating the resistance of the completely flaccid muscles, and by abolishing consciousness, thus preventing the patient from moving his limbs from the forced positions in which they are placed. The French theory that acute chloroform intoxication is responsible for these paralyzes is not tenable, as they appear with all kinds of anaesthetics. Women seem more predisposed to paralyzes than men. The paralyzes generally occur in the upper extremities, and may affect the plexus as well as individual nerves, cases of the former being more frequent. The arm, being drawn backward and upward to an extreme degree, the plexus is pinched between the acromial third of the clavicle and the first rib. There is also pulling and overtension of the plexus in various positions of the arms. The radial is the most frequently affected of individual nerves. Outer mechanical pressure, for instance by leg holders, is also responsible for the isolated paralyzes in the lower extremities.

The prognosis is favorable and almost all cases recover if promptly recognized and treated. The treatment consists chiefly in faradization, active and passive motion, and massage. The author describes six cases which he has observed, three of which had paralysis of the upper trunk and three of the whole plexus. In the first three cases the arm had been drawn extremely back and upward. In two cases

there was cessation of the radial pulse for a greater or less time, the patient having good respiration and a good appearance.

The author dissected a brachial plexus on the cadaver and determined the following points: The arm of an individual lying on his back can be raised forward as high as the shoulder and higher without the plexus being put on tension. But if the arm is drawn backward it causes a marked tension of the plexus over the head of the humerus, which is perceptible as far as the exit of the nerves from the intervertebral foramina. This tension becomes extreme when the upper arm is rotated inward and the head drawn toward the opposite side. If the arm is now raised from the shoulder to a vertical position, the tension becomes greater the nearer the vertical position is approached. In the living patient, the pulse, which has been suppressed, again appears, but soon the plexus is pinched between the clavicle and first rib. So there are two separate injuries to the plexus to be distinguished — the tension over the head of the humerus, and the pinching between the clavicle and rib. Prophylaxis naturally consists in the avoidance of injurious positions of the arm.

COLLEY.

McGrath, B. F.: A Discussion of Various Anaesthetics and Methods; Experimental Observations. *J. Am. M. Ass.*, 1913, lxi, 1516.

By Surg., Gynec. & Obst.

The paper contains, first, a brief discussion of the present status of the question of anaesthetics; second, data from the Mayo Clinic; and, last, some preliminary observations on an experimental work which is to be continued at length. Reference is made to the various new anaesthetics, combinations, methods, and routes of administration. The qualities of the expert anaesthetist assuring safety and avoiding unnecessary disturbances, both immediate and remote, are discussed; and the injustice to patients from anaesthetics in the hands of the inexperienced is emphasized. Because of an unskillfully administered anaesthetic, the operative result may not be adequate for the pathological condition which the patient presents. Contributing to this is the frequently admitted mental disturbance of the surgeon.

The statistical history of anaesthesia is briefly referred to, and the divergent results attributed to lack of parallelism of the essential factors concerned in comparing anaesthetics and methods. The value of some of the more recently applied procedures for administering anaesthetics, particularly in case of operations about the head, neck, and within the thorax, is appreciated. In discussing data from the Mayo Clinic, statistics of the number of anaesthesias, the various anaesthetics and methods employed, and observations on the results since the year 1900 are presented. The practice of the clinic in the preliminary administration of drugs, together with opinions as to their respective values is given. The object aimed at is to guard against impurities in the

anæsthetic, to induce anæsthesia with the least possible mental and physical disturbance to the patient, and to employ the smallest amount of anæsthetic consonant with an even surgical anæsthesia.

Ether by the drop method, in the hands of skilled anæsthetists, indicates the position of the Mayo Clinic on the question of general anæsthesia. The present tendency of the clinic is toward amplifying the employment of local anæsthetics. Kymographic tracings of experiments are presented, largely for the purpose of indicating the plan of the recently undertaken work. The effect on the heart and the respiration of different anæsthetics, variously administered, is depicted. Anæsthetics were employed intravenously in 109 experiments on dogs. The method requires considerable experience and care, and viewed in the present light seems to be limitedly indicated. Air embolism was studied in conjunction with intravenous anæsthesia. As has been shown by others, large amounts of air (100 ccm.) intravenously injected in fractional doses (within 10 to 20 seconds) are well borne by the animal. Doses of 50 or 60 ccm. injected at once frequently proved fatal. Kymographic records were made throughout the work, and, though presenting nothing new or original, are interesting to review.

Finsterer, H.: Importance of the Anæsthetic in the Post-Operative Course in Laparotomy (Über die Bedeutung der Anästhesie für den Verlauf der Laparotomie). *Wien. klin. Wchnschr.*, 1913, xxvi, 1560. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author discusses the advantages of local anæsthesia in the course of laparotomies after operation. He brings forward some very important points which support his plea for a more extensive use of local anæsthesia even in laparotomies. The most important thing is the avoidance of surgical shock, which may lead to death if the anæsthesia is very long. The good results of stomach resection under local anæsthesia are well known. The lowering of the blood pressure in peritonitis and occlusion of the intestine are furthered by the use of chloroform or large quantities of ether, thus giving rise to great danger for the patient. Local anæsthesia offers a protection against these contingencies and the chances of an uneventful recovery are markedly increased by its use. In such cases, the author opens the abdominal wall under local anæsthesia and then gives, if necessary, small quantities of ether, which acts as an excitant. The post-operative course is very much simplified by local anæsthesia. Complications, such as pneumonia and dilatation of the stomach, do not, as a rule, occur. HIRSCHEL.

SURGERY OF THE HEAD AND NECK

HEAD

Turck, R. C.: Harelip; with Illustrative Cases. *Surg., Gynec. & Obst.*, 1913, xvii, 500.

By Surg., Gynec. & Obst.

Turck has modified the Maas-von Langenbeck operation for double complicated harelip by utilizing, when possible, the semicircular incisions of Malgaigne in the upper angles of the defect to restore the nostrils and to provide accurate approximation of the lip segments, and the Mirault flap is added to prevent notching in the vermilion border.

Since a majority of complicated cases presented for operation are marasmic or are in varying stages of malnutrition and anæmia, the author reverses the usual procedure, in that the lip is repaired first, that the child may be provided with some power of nursing and thus gain strength enough to withstand the more severe and dangerous palatal repair.

In severe cases, Turck advocates the replacement of the premaxilla at the end of three to six weeks and the repairing of the lip two or three weeks later. Narrow palatal clefts are then operated by the Brophy method in the third month; extensive defects requiring flap transference are delayed until the end of the second year.

A case of double complicated harelip is reported in which salivary ducts, probably from the submaxillary salivary glands, opened through the vermilion border of the lower lip. After the repair

of the premaxilla and upper lip had been completed the ectropion of the lower lip was corrected and the salivary ducts were transplanted into the oral mucosa at the angles of the mouth. The ducts functionated perfectly in their new position.

Ulrich, J.: The Treatment of Harelip and Cleft Palate; Experience with 160 Cases (Über die Behandlung des Labium leporinum und Palatum fissum. Erfahrungen aus ca. 160 Fällen). *Kong. Verhandl. d. Nord. chir. Foren.*, Kopenh., 1913.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

A cleft of the alveolar process should be operated on as soon after birth as possible, according to the methods of Duplay or Bardeleben, and if the latter operation is chosen, it is better to resect too much than too little. The operation for harelip is best done about the fourth or fifth month. If it is unilateral the methods of Mirault, Malgaigne, or Nélaton should be preferred; if double, those of Hagedorn or König. The principal feature is to free the soft parts well from the superior maxilla toward the sides and from the alæ nasi so that the nostrils may be kept round. Incomplete harelip is best made complete at the time of operation. In most cases after one or two years minor secondary operations are required to correct irregularities in the prolabium and alæ nasi. In the most pronounced cases of cleft palate, in which operation so shortens the palate and puts it on such tension that

speech is not improved, the author recommends treatment by prosthesis. In the milder cases Von Langenbeck's operation is usually done, and with vocal training the results are uniformly good. In many cases normal speech follows the operation. In this operation Geffer's speculum, and Trelat's needles can be used to advantage. The muscles of the soft palate can be separated at their insertion into the hard palate and the nasal mucous membrane removed according to Berry by means of curved scissors.

In the 71 cases of cleft palate operated by Langenbeck's method, 33 resulted in primary union, 30 were operated upon a second time with good results, and 7 had partial union. One child died of bronchopneumonia. In 2 cases Lane's operation was used and followed by primary union, but after one to two years the palate had atrophied and the cleft had become larger. The results were so unsatisfactory that the author has abandoned that method. In 14 cases Brophy's method was applied on the same principle as the application of a clamp to hold both parts of the superior maxilla in place. In 4 of these cases death resulted from sepsis, and as the union of the soft parts took place with extraordinary difficulty, even in infants, the author has also given up this method of operation. AGGE KOCK.

Beckman, E. H.: The Surgical Treatment of Cancer of the Lower Lip; with Report of 199 Cases. *J. Okla. St. M. Ass.*, 1913, vi, 185.
By Surg., Gynec. & Obst.

Cancer of the lower lip is ideally situated for an early diagnosis. All cancers during the early stages of the disease are localized to small areas and, while thus localized, can almost always be cured. Microscopic examination of tissues by a competent pathologist gives the only absolute proof of a correct diagnosis. The principle underlying the cure of cancer of the lower lip is the same as that involving the cure of cancer in any other part of the body, i.e., primary growths together with the glands into which the area of the growth drains must be thoroughly removed.

It is advisable in every case to remove the lymphatics on each side at the primary operation. This should include the submaxillary salivary glands also, since it is impossible to completely remove the lymph nodes and leave the submaxillary salivary glands. After removing the glands from one side they should be examined microscopically and, if involved, the dissection should be carried down that side, making a block dissection. Both the anterior and posterior deep jugular lymphatics should be removed.

The percentage of cures following primary radical operation for cancer of the lower lip in the Mayo Clinic is 83.8. Of these cases which were traced: 2 were operated on one year ago, 25 between 1 and 2 years, 17 between 2 and 3 years, 20 between 3 and 4 years, 15 between 4 and 5 years, and 4 more than 5 years. In 18 cases, glandular involvement

was demonstrated by microscopic examination at the time of operation.

The results of the cases treated are shown by the following table:

CANCER OF THE LOWER LIP

Group	No. of cases	No. operated	Traced	Not traced	Cured	Not cured	Inoperable	Per cent cured
I. Clinical diagnosis only....	25	2	■	10	2	23	17	..
II. Primary radical operation	126	126	99	27	83	16	..	83.8
Glands involved.....	18	18	18	..	■	9	..	50.
III. Late radical operation..	25	25	■	5	14	6	..	70.
Glands involved.....	12	12	12	0	4	■	..	33½
IV. Glands removed one side or incomplete.....	5	5	■	0	2	3	..	40.
V. Local excision only.....	18	18	15	3	11	■	..	73.3

Loos, O.: The Topography of Injections into the Inferior Alveolar Nerve (Zur Topographie der Injektion auf den Nervus alveolaris inferior). *Deutsche Monatschr. f. Zahnk.*, 1913, xxxi, 557.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Loos made injections of fluid gelatine colored with methylene-blue into the inferior alveolar nerve of cadavers, according to various methods, and found that the walls of the area infiltrated, the pterygomandibular spaces are formed toward the midline by the fascia which covers the internal pterygoid muscle, laterally by the periosteum of the mandibular sulcus of the ascending ramus, and above by the lower border of the belly of the external pterygoid. The inner wall goes sharply toward the tongue and contains the nerve, which comes out below the inner border of the external pterygoid muscle and from there extends obliquely outward and downward to the mandibular foramen. In the outer wall are the vessels. The inferior alveolar artery branches off not quite 1 cm. below the incisura semilunaris from the internal maxillary artery, which runs almost parallel to the border of it, and keeps close to the bone until it reaches the foramen. Consequently the artery and the nerve lie at a sharp angle to each other in a more frontal plane, and if we liken the pterygomandibular space to a pyramid the apex of which is on the foramen, the artery forms the posterior lateral side, the nerve the inner anterior side, and the internal maxillary lies in the base of the triangle. To avoid an aberration into the musculature in making an injection, or striking the vessels, it is advisable to feel along the bone. In this way an injection into the internus can certainly be avoided. The puncture of a vessel, however, can be avoided only when the injection is made a short distance from the bone. HERDA.

NECK

Müller, G. P.: The Treatment of Tuberculous Cervical Lymphadenitis. *Ann. Surg., Phila.*, 1913, lviii, 433.
By Surg., Gynec. & Obst.

A comprehensive study of the literature of the last ten years, as well as an analysis of 103 cases of

tuberculous lymphadenitis, studied in association with Frazier, are the basis of the author's present conclusions. The cervical nodes were affected in 96 cases, the inguinal in 3, the axillary in 3, and both cervical and axillary in one, the age of the patients ranging from 11 months to 40 years.

While dwelling upon the etiology in these cases, he concludes that tuberculous lymphadenitis represents the local deposits and proliferation of the tubercle bacillus from some lymph vessel draining a particular point of entry, i.e., the faucial tonsil, the pharyngeal tonsils or adenoids, a diseased middle ear, carious teeth, lesions of the buccal and nasal mucous membranes; also from cracks and fissures and diseased skin. The consumption of tuberculous butter or milk; the childish habit of sucking fingers, pencils, or other objects picked up from the floor; the consumption of food on which flies have deposited bacilli; and, especially, hereditary tendencies as well as the occupation of a dwelling formerly occupied by a tuberculous person, are all conducive to the spread of the disease.

While the author does not wish it understood that he is opposed to the use of hygiene, tuberculin, or

the X-ray, he is enthusiastically in favor of radical surgery in these cases, basing his views upon the extremely low mortality. He quotes a record from the Mayo Clinic where 649 patients have been operated upon without any operative mortality, as well as the older records of Jordan, Wohlgemuth, and Bloss, whose results are identical with those of Mayo.

In his operative technique, Müller is careful to sew the platysma and fascia with plain catgut, using worm gut, horsehair or the subcuticular stitch for the skin, while small pieces of rubber tissue are used for drainage. He pays particular attention to the hygiene of throat wounds. He is painstaking in the matter of nerve isolation and preservation. He advises care lest the caseous contents of the nodes be "spilled," and concludes with the suggestion that perfect hamostasis be secured.

The author considers the importance of after-treatment and says: "While an operation may remove with one stroke all the infected tissue, yet the patient's resistance to tubercle infection is low and his surroundings are still with him."

MATTHEW W. PICKARD.

SURGERY OF THE CHEST

CHEST WALL AND BREAST

Cadenat, F. M.: *Treatment of External Luxations of the Clavicle* (Traitement des luxations externes de la clavicule). *J. de chir.*, 1913, xi, 16.
By Surg., Gynec. & Obst.

Cadenat undertakes to explain the pathology and a rational mode of treatment of external dislocations of the clavicle. If the dislocation is incomplete, it requires no further treatment than that usually prescribed — a sling. It is the complete dislocation which is very difficult to handle satisfactorily, as no bloodless method has as yet been devised to hold the dislocated clavicle in place.

From numerous experiments on the cadaver and at biopsies it has been shown that complete luxation of the clavicle above the acromion can take place only when the trapezoid and conoid as well as the acromioclavicular ligaments are ruptured.

The first operative attempts at permanent reduction of this dislocation of the clavicle above the acromion aimed at acromioclavicular fixation. This fixation can be complete only after ankylosis of the joint is obtained, and in an exhaustive chapter devoted to the physiology of this joint the author shows that such ankylosis must seriously interfere with the function of the shoulder-joint; therefore the only operative procedures justifiable are those aiming at reconstruction of the coracoclavicular ligaments. Three methods have been proposed: (a) Direct suture, (b) syndesmoexy, (c) ligamentoplasty.

The direct suture of the ruptured trapezoid and conoid ligaments is so difficult in fresh cases, and so

nearly impossible in old cases, which are those usually seen in surgical clinics, that it is rarely feasible.

Syndesmoexy, by means of silver wire passed in a figure eight around the coracoid process and through the clavicle (as practiced by Delbert), is efficacious as long as the wire holds. But the wire invariably breaks and sooner or later the dislocation recurs. This method, however, is excellent for the treatment of fractures of the external end of the clavicle, because union takes place before the wire gives way.

By the use of living tissue in place of wire, the author arrives at the method of repair he advocates, namely, ligamentoplasty. After experimenting with all the available structures in this region, the powerful arch of the acromioclavicular ligament alone satisfied all conditions. Its removal from normal attachments weakens the shoulder against upward dislocations, but these are so rare as to be negligible. The posterior bundle of fibers of this ligament is situated near the angle of the coracoid, its insertions bordering on those of the trapezoid ligament. Its position, therefore, is ideal for the following ligamentoplasty.

A skin incision 8 cm. long is made in the direction of the fibers of the deltoid muscle directly between the acromial and coracoid processes. This incision is carried through the fibers of the deltoid down to the arch of the acromioclavicular ligament. The vessels which cross the field are cut between two ligatures. Next the deltoid is retracted outward, the strong posterior band of the acromioclavicular

ligament is identified, and cut far out in order to obtain as much length as possible. A suture is passed through the end of the cut and freed ligament and passed behind, and brought well up above the clavicle between the fibers of the trapezius muscle (hyperextension of the head and an exaggeration of the dislocation by bringing the arm forward and inward considerably facilitate this maneuver). The next step is to re-establish the acromioclavicular joint by suturing the torn superficial acromioclavicular ligament. If this is deficient, portions of the deltoid or trapezius may be utilized. If the reduction is maintained with difficulty, the syndesmopexy after Delbert is advised. Now the loosened bundle of fibers of the acromioclavicular ligament is attached to the conoid ligament and the clavicle, and the operation is completed by a skin suture.

In considering the indications for these different procedures, the author reiterates that subluxations require only a sling and early massage. Complete luxations in women who desire good cosmetic results should be treated by the acromioclavicular fixation. But wherever perfect functional result of the shoulder is desired, ligamentoplasty is the best method for strength and free mobility. The time of operation in uncomplicated cases is preferably as soon after the injury as possible. Afterwards the shoulder is immobilized as completely as possible until the sutures are removed on the eighth to tenth day.

ELLIS FISCHER.

Betke: Tuberculosis of the Tracheo-bronchial Lymph Glands, and Its Surgical Treatment (Tracheo-Bronchialdrüsentuberkulose und ihre chirurgische Behandlung). *Beitr. z. klin. Chir.*, 1913, lxxxv, 521.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author reports a case in which he successfully removed enlarged tubercular lymph glands at the bifurcation of the trachea to relieve dangerous embarrassment of the respiration. The article discusses fully the clinical picture and the surgical treatment of the condition.

The case history is that of an unmarried woman, 29 years old, with a family history of tuberculosis. She had suffered for a considerable period from tuberculosis of both apices. As the disease progressed increasing dyspnoea developed, which was so bad at times that mediastinal tumor was suspected. The X-ray showed markedly enlarged lymph glands at the exit of the right bronchus from the trachea. The removal of these was indicated to relieve the symptoms of suffocation. This was accomplished by entering the anterior mediastinum by Sauerbruch's and Schumacher's method without opening the pleura. The cavity was tamponed. The patient stood the operation well, and when she was discharged on the 24th day after operation, breathing was normal, cyanosis and venous stasis had disappeared, and swallowing caused no discomfort. X-ray showed no shadow at the junction of the bronchus with the trachea. The caliber of the

bronchus was normal. Nine months after operation the patient was still well.

This case, operated upon by Rehn, was the first of its kind. It opens a new field of operative surgery. The complicated topographical relations are illustrated by three plates from the exhaustive work of Sukiennikow of the Waldayer Institute.

Special diagnostic methods for tuberculosis of bronchial lymph glands are described, including tracheo- and bronchoscopy, X-ray, and Neisser's sound palpation, which is described as follows: An oesophageal sound with a rubber condom attached is passed 23-26 cm. behind the teeth. The condom is then inflated. If there is considerable enlargement of the glands a stabbing pain as well as pressure pain is produced. This is generally located in the middle of the chest and more rarely in the back. The many dangerous complications of the disease and the various distressing symptoms demand active measures. Surgical intervention is imperative when pressure from glands produces suffocation or when it is possible to diagnose invasion of the air passages. It is justified when the glands produce severe symptoms as, irritative cough, dyspnoea, venous stasis, etc. It is to be considered when the enlarged glands are evidently the only virulent tubercular foci.

TIEGEL.

Burckhardt, H.: Infection of the Thoracic Cavity (Über Infektion der Brusthöhle). *Arch. f. klin. Chir.*, 1913, ci, 904.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

With a very fine cannula Burckhardt injected air and a staphylococcus bouillon culture into the pleural cavity of rabbits. In control animals staphylococci were injected without a preceding pneumothorax. In only one of thirteen pneumothorax animals did an extensive pleural infection fail to develop. Of eight control animals only three showed noteworthy pleural infection. In agreement with Nötzel and Tiegel, Burckhardt concludes that both total and partial pneumothorax predispose in the highest degree to infection of the thoracic cavity. Burckhardt does not agree with Kracht that the effusion resulting from the pneumothorax gives the conditions necessary for the development of the bacteria. An effusion may not occur in the first five to six days. He believes that the normal respiratory movements rapidly spread the bacteria over large areas and so enable the animal to combat the infection. On the other hand, in pneumothorax the bacteria lie quiet and are able to multiply. The inflamed pleura absorbs more slowly than the normal pleura. Thus a vicious circle results: pneumothorax favoring infection, inflammation of the pleura favoring the continuation of the pneumothorax. If exudation takes place after the lung has expanded, adhesions and sacculated empyemas form. If the exudation is abundant, large empyemas form. Circumscribed empyemas are also the result of partial pneumothorax. Partial pneumothorax remains after thoracotomy (at least in rabbits), even

with expansion of the lung by differential pressure. The author does not consider as convincing the experiments of Tiegel, who obtained pleural infections in rabbits both in residual pneumothorax, as well as in pneumothorax overcome by positive pressure, and explains this result as a consequence of injury to the pleural endothelium. According to his own experience, a partial pneumothorax always remains. Burckhardt does not believe that the injury to the endothelium is responsible, but rather injury to the underlying tense connective-tissue membrane. If this is damaged, the bacteria take hold in the loose connective tissue and multiply rapidly.

SCHUMACHER.

MISCELLANEOUS

Le Wald, L. T., and Senior, H. D.: Teleröntgenogram of the Anterior Thoracic Wall, with the Heart in Situ. *Tr. Am. Röntg. Ray Soc.*, Boston, 1913, Oct. By Surg., Gynec. & Obst.

A teleröntgenogram and explanatory outline-drawing reproduced represent the heart and its valvular orifices in their relation to the anterior thoracic wall. Although the data obtained from a single case cannot be applied universally, the method gives such unequivocal results that it promises to be of value as a means of study.

The subject was a woman who died at the age of 40 of acute pneumonia (without effusion) of the right upper and middle lobes. There was a single small healed tubercle in the left apex, but otherwise the organs were normal.

The body was injected through the arteries with equal parts of commercial formalin and water. The injection was begun with the body in the horizontal position and finished with it in the vertical position. The body had been stored in the horizontal position for some months and was frozen. The frozen thorax was removed and then cut by means of a band saw accurately in the frontal plane so as to open both auricles from behind without interfering with the contour of the heart. In the intact anterior portion of the thorax the mitral and tricuspid valves were readily accessible. Wires were bent to fit accurately the groove corresponding to the attachment of the valves to the heart wall. These were then placed in position from the auricle and, in the case of the tricuspid valve, fixed by means of two sutures. The cusps of both the auriculo-ventricular valves were found to be in apposition. The interior of the aorta was reached through the anterior wall of the left auricle. The region of the pulmonary valve was made accessible by removing the remainder of the left lung and cutting the artery longitudinally from the left side. Wires were shaped to fit the aortic and pulmonary orifices and placed so that they were in contact with the deepest part of each of the semilunar valve cusps, which provided excellent guides in placing them. After the pulmonary ring was placed, the cut edges came into position spontaneously.

The first teleröntgenographs were taken with the material frozen, the remaining portions of the lungs and liver having been removed after freezing. The parts were so rigid, however, that after the first trials freezing was not repeated. It can be said safely that lack of rigidity is not a source of error. To minimize optical distortion, the tube was placed six feet from the object, which was horizontal, with the anterior surface in contact with the plate-holder. The light was accurately centered on a shot. This shot was embedded in the skin of the median line of the thorax at the middle of the longitudinal area occupied by the wires.

Stereoscopic röntgenographs were taken in the usual way and the subject was also radiographed in various positions.

The outline was traced from the negative, most of the doubtful points in which were elucidated by the stereoscope. The left limit of the superior vena cava and a small portion of the upper right margin of the heart where the latter is confused by the root of the lung, could not be determined with certainty. The outline of these regions was therefore omitted, but subsequent removal of the heart testified to the approximate accuracy of the dotted lines by which these margins were indicated. Several parts identified in the stereoscopic picture, such, for instance, as the inferior vena cava, the anterior papillary muscles of the right and left ventricles, and one of the mitral cusps, were omitted for the sake of clearness.

Wenckebach, K. F.: The Radiology of the Chest. *Arch. Röntg. Ray*, 1913, xviii, 169.

By Surg., Gynec. & Obst.

Wenckebach contends that in radiology of the chest the observer should be not only a good röntgenologist but a good clinician as well, that he may be able to estimate the pathological process as a whole. He claims that Röntgen examination outstrips percussion, not only disclosing change of air content but its form and, by stereoscopy, its position. Stereoscopy is of the greatest value, allowing a precise estimate of the position of any structure shown, and dispersing any doubt of extrapulmonary lesions. The hilus pictures of healthy persons show marked individual differences and no far-reaching conclusions can be drawn.

Emphysema of the outer parts of lungs, by exaggerated percussion note, often conceals deep changes which röntgenography easily discloses. In the discovery of small centrally placed infiltrations in pneumonia; in the scattered foci of bronchial pneumonia; in tuberculo-pneumonic processes (in areas of already impaired resonance); tubercular cavities; encapsulated pleural exudates; pleuritic adhesions and metastatic tumors, information is often gained which cannot be otherwise acquired. The theory of pneumothorax has undergone a complete change under the influence of röntgenology; its frequency and general behavior were first determined by this method, which has also made possible

the control of artificial pneumothorax in its therapeutic use.

Stereoscopy can render invaluable services in the recognition of normal and pathological conditions in

the thorax; it offers extended opportunities for further advances in the knowledge of these diseases and their ultimate control.

DAVID R. BOWEN.

SURGERY OF THE ABDOMEN

ABDOMINAL WALL AND PERITONEUM

Bainbridge, W. S.: Technique of the Intra-Abdominal Administration of Oxygen. *Am. J. Surg.*, 1913, xxvii, 364. By Surg., Gynec. & Obst.

In abdominal surgery and gynecology two methods have been used heretofore.

1. By continuous current described by Thiriar in 1899, and used by Javaux, Ramond, and others. Quantities up to 600 liters in 36 hours have been used in this way.

2. By injection into the abdominal cavity with immediate closure of the wound.

Bainbridge has employed the latter method since 1903 in more than 125 laparotomies.

His deductions from animal experiments were:

1. Oxygen is completely absorbed in the abdominal cavity.

2. It is a slight respiratory stimulant.

3. It is a slight cardiac stimulant.

4. Has but little effect on blood pressure when gas pressure is moderate.

5. Tends to revive animal quickly from deep anesthesia.

6. Hastens recovery of animal after discontinuance of the anesthetic.

7. A pressure of more than 250 ccm. of water causes collapse.

8. Tends to prevent the formation of adhesions.

9. Changes dark blood to scarlet in cases of anoxæmia.

10. Stimulates intestinal peristalsis.

11. It is not an irritant to the peritoneum or viscera.

The purposes for which oxygen are administered intra-abdominally are:

1. To lessen shock, nausea, and vomiting.

2. To overcome negative intra-abdominal pressure after the removal of large tumors.

3. To prevent the formation of adhesions.

4. For its effect upon certain types of tubercular peritonitis.

5. For its effect upon pus-producing organisms and their toxins.

The gas employed by Bainbridge was: oxygen 94-97 per cent, nitrogen 2.37-4.5 per cent, a trace of carbon dioxide, no chlorine, no nitrous oxide.

It was used at a temperature of 90-100° F. The gas is led through a wash-bottle containing hot water into the tubing of a rubber ice coil, submerged in a basin of hot water. To the long tube leading from this coil a sterile rubber tube is connected by a glass connecting tube.

The sterile tube is introduced into the abdomen through the laparotomy wound. The peritoneum is closed up to the tube with a running stitch and one interrupted suture is placed in the peritoneum above and below the tube and tied. A peritoneal purse-string is placed about the tube and the ends left untied. The muscles are closed by whatever sutures are preferred, the aponeurosis by interrupted sutures, and a long suture placed in the aponeurosis half way around the tube, the ends of which are left untied. The remaining layers of the abdominal wall are closed about the tube.

When the desired amount of gas has been introduced, the peritoneal purse-string is tied as the tube is withdrawn slowly. The aponeurotic suture is now tied. The knots of both lie buried.

Intracellular emphysema, which sometimes occurs, is a discomfort to the patient.

Experience continues to verify the earlier indications. The amount is determined, in tumors and ascites, by measuring the girth of the abdomen before operation, and using enough oxygen to bring the girth after operation up to or just under the previous measurement. In shock and hæmorrhage liver dullness is just obliterated, provided the liver is movable.

DONALD GORDON.

Fischer, M.: Acute Progressive Peritonitis; Review of 160 Operated Cases (Über akute fortschreitende Peritonitis. Ein Rückblick auf 160 operierte Fälle). *Beitr. z. klin. Chir.*, 1913, lxxv, 696. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Fisher reports 160 cases of acute, diffuse, progressive peritonitis, treated surgically. In 107 of these the appendix was the point of origin. There was a mortality in these of 12.9 per cent in early cases and 54.9 per cent in late cases, 48 hours being the time limit. The prognosis became worse as age advanced. Following perforated gastric ulcer there were 5 cases with 4 deaths. There were 2 cases of perforated duodenal ulcer with 2 deaths. All except one case were operated upon 24 hours or more after perforation. The perforation was sutured in all cases and drainage inserted. There was one case of jejunostomy. Of 2 cases following gunshot wound of the abdomen, one died. The operation was performed after 24 hours. Six operations followed gangrene of the gut due to strangulated hernias.

All of these patients died, the hernias having been incarcerated 2 to 5 days. The remainder occurred in the following conditions and with results as indicated: two perforated typhoid ulcers, with 2 deaths, operated upon 10 and 24 hours after perforation; one

stab wound operated after 12 hours, recovered; one stab wound operated after 6 hours, recovered; two of perforation of a strangulated loop of gut, one inflammatory the other a Meckel's diverticulum, both died; one sloughing invagination of the ileum, recovered after resection; three post-partum, died; five pyosalpinx (4 unilateral) 3 died; three suppurative parametritic conditions, one died; four perforations of distended gall-bladders, 3 died; one perforation of paranephritic abscess, died; one diplococcic peritonitis, died. In cases of fluid exudate the abdomen was flushed with a salt solution.

After closing a number of cases of perforated peritonitis without drainage and having to do a secondary operation for abscess formation, the author drained all such cases freely, especially through the Douglas pouch. In cases of serous discharge the drain was removed in 24 hours; in pus cases it was allowed to remain longer or replaced by a smaller one. During and after operation intravenous injection of digalen was used with good results. In the after-treatment Fowler's position, and in suitable cases, Küster's were used. In addition to subcutaneous injection of normal salt solution, continuous rectal infusions were given. In severe cases, and during operation, intravenous injections of suprarenin were employed. Artificial heat was always used. For paralytic conditions of the gut physostigmin was given subcutaneously. In 7 cases the bowel was relieved by one or more punctures. After the second day exercises were employed for aeration of the lungs — deep respiration, loud talking, inflation of an air pillow. The prognosis depends largely upon the type of disease.

BLEZINGER.

Weil, S.: Rare Forms of Hernia (Über seltenere Hernien). *Ztschr. f. ärztl. Fortbild.*, 1913, x, 417.
By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Short descriptions are given of hernias in unusual locations (oval openings in the ensiform process of the sternum, internal supravescical hernia, interparietal hernia, lateral abdominal hernia, obturator hernia, Treitz's hernia, and omental hernia), unusual contents of the hernial sac (bladder, sliding hernia of the colon, hernia of the intestinal wall, and true Littré's hernia), and pathological changes in the hernial sac (carcinoma metastases, tuberculosis, adhesions), and of the hernial contents (torsion of the omentum and spermatic cord, volvulus in a large umbilical hernia, ileus and apparent incarceration, peritonitis and appendicitis in the hernial sac, and incarceration of the appendix). In conclusion several cases of severe injury from attempts of taxis are reported.

REINHARDT.

Schley, W. S.: Rectus Transplantation for Deficiency of Internal Oblique Muscle in Certain Cases of Inguinal Hernia. *Ann. Surg.*, Phila., 1913, lviii, 473. By Surg., Gynec. & Obst.

Schley discusses the indications for and methods of rectus transplantation in the radical cure of inguinal

hernia. The operation is indicated in markedly deficient internal oblique muscle and weak transversalis fascia. It is contra-indicated in indirect inguinal hernia with a good internal oblique muscle, and often in direct hernias. Schley describes a method of rectus transplantation that he has followed in twelve cases of indirect hernia with deficient internal oblique, and reports apparently perfect repair in all after periods, ranging from four months to two years since operation.

ROBERT H. IVY.

Hull, A. J.: Recurrence of Inguinal Hernia. *Ann. Surg.*, Phila., 1913, lviii, 479.

By Surg., Gynec. & Obst.

Recurrence of inguinal hernia may take place in the following classes of cases:

1. Failure to ligate or suture the sac sufficiently high up.
2. Cases operated upon by ligature of neck of sac and suture of conjoined tendon over cord to Poupart's ligament.
3. Recurrence sometimes takes place in cases operated on by ligature of neck of sac, and suture of conjoined tendon beneath cord to Poupart's ligament.
4. Ligature of sac alone.
5. Ligature of neck of sac and displacing the ligatured neck by buried sutures.
6. Cases of hernia treated by trusses during childhood.

From a consideration of the modes of recurrence the following points appear to be necessary in the operation for hernia: (a) Transposition of the neck of the sac; (b) constriction of the internal ring; (c) strengthening the weak area of the posterior wall of the inguinal canal to the inner side of the internal ring. In the typical Bassini operation this is done by suturing the conjoined tendon to Poupart's ligament; (d) obtaining adequate pressure along the internal ring, (e) strengthening the weak area to the outer side of the internal ring. In the operation described by Hull, silkworm (fishing) gut is used for the deep stitches, which occasions no after trouble.

ROBERT H. IVY.

Miller, R. T.: Enterogenous Mesenteric Cysts. *Bull. Johns Hopkins Hosp.*, 1913, xxiv, 316.

By Surg., Gynec. & Obst.

Miller in this article reports in detail a very interesting case of intestinal obstruction due to a congenital enterogenous mesenteric cyst causing volvulus. He considers a detailed presentation of a single case of value, in view of the fact that there is such a wide difference of opinion as to the genesis of the cysts; that a positive diagnosis has probably never been made before the operation or autopsy; and that their surgical significance is almost universally ignored.

His case was that of a female four days old, in which operation and resection were followed by death. The symptoms were those of complete intestinal obstruction, but the real cause of the

obstruction was not surmised. At the operation there was seen upon opening the peritoneum both dilated and collapsed cyanotic loops of small bowel. Digital exploration revealed in the right flank just below the level of the umbilicus a freely movable mass which proved to be an intramesenteric tumor, roughly oval, about 4 cm. long in its greatest diameter. A resection and lateral anastomosis was done. Death resulted five hours after completion of the operation.

The specimen removed consisted of an intramesenteric cyst whose wall was, in part, directly continuous with that of the jejunum and whose histological structure resembled closely that of the adjoining portion of the bowel. Its structure and arrangement pointed directly to an enterogenous origin by a process of sequestration during embryonic life.

Miller reviews the literature and presents an excellent working classification of mesenteric cysts of embryonic origin, namely:

1. Cysts of intestinal origin:
 - (a) By sequestration from the bowel occurring during development.
 - (b) From Meckel's diverticulum when it arises from the concave side of the bowel (or acquires an intramesenteric position).
2. Dermoid cysts.
3. Cysts arising from retroperitoneal organs; viz., urogenital organs (germinal epithelium, ovary, wolffian body, Müllerian duct).

GEORGE E. BEILBY.

GASTRO-INTESTINAL TRACT

Ramsbottom, A., and Barclay, A. E.: The Diagnosis of a Hair-Ball in the Stomach. *Arch. Röntg. Ray*, 1913, xviii, 167. By Surg., Gynec. & Obst.

The authors report a case first thought to be splenic anæmia. Later, the mobility of the tumor mistaken for spleen led to röntgen examination. A bismuth meal outlined both lesser and greater curvature, with the tumor showing between. By palpation under the röntgenoscope the tumor was found movable within the stomach and, when forced into the gas-filled fundus, carried enough bismuth to cast a dark shadow. Diagnosis was so complete that the size and shape of the hair-ball were predicted.

DAVID R. BOWEN.

Chapin, H. D.: Radiographic Studies of the Gastro-Intestinal Tract in Infants. *J. Am. M. Ass.*, 1913, lxi, 1419. By Surg., Gynec. & Obst.

The first two cases studied by Chapin were young infants of seven and eight months. In these he determined the length of time that the barium remained in the intestinal tract. In the first case gas began to appear in the colon in three hours and ten minutes and was expelled into the rectum in seven hours. The second case corresponded closely to the first.

The next study was a series of ten cases in each of

which an enema of barium sulphate amounting to from 4 to 16 ounces was given. X-ray pictures showed the extreme variation in the motility of different portions of the colon. In one of the cases the ileo-cæcal valve was patent and in another case this was probably true. After passing the sigmoid the barium passed into the cæcum in a very few seconds.

After a study of the X-ray pictures, Chapin is certain that it is not possible to pass a colonic tube beyond the upper portion of the sigmoid.

Morse, J. L.: Use of the Röntgen Ray in the Diagnosis of Obscure Abdominal Conditions in Infancy and Childhood. *J. Am. M. Ass.*, 1913, lxi, 1122. By Surg., Gynec. & Obst.

This study consisted in an attempt to diagnose obscure conditions in infancy and childhood. The first three cases were those which offered for diagnosis pylorospasm, pyloric stenosis, or some other cause of vomiting. In the first of these it was possible to make a positive diagnosis of stenosis. In the second, spasm was diagnosed, while in the third, there was only a gastric indigestion. The next series of cases were those in which there were combined recurrent attacks of vomiting and abdominal pain. The first of these was shown to be due to a prolapse and kinking of the large intestine. The second, which suggested the presence of a stone in the bladder, was a case of malposition of the colon. The third was a case of stone in the left kidney, while the fourth was a case of adhesions of the colon and cæcum, which diagnosis was afterwards confirmed at operation.

Morse also gives an instance where the cause of constipation was determined by the X-ray. In this case the cause was sluggishness in the colon. He then shows a case where sarcoma of the left kidney could be located by the appearance of a mass between the spinal column and the colon filled with bismuth.

Scudder, C. L.: Certain Observations Upon Two Hundred Cases of Gastric Disease. *Boston M. & S. J.*, 1913, clxix, 635. By Surg., Gynec. & Obst.

The author dwells upon the very low mortality that attends operations for gastric disease. He considers this as very promising for the future, in that more and more cases of gastric disturbance will be subjected to operation.

In the etiology of gastric disease a remarkable part seems to be played by syphilis. Syphilis of the stomach is more common than is generally supposed; the lesion is a tertiary one and may be a gumma, an ulcer, or adhesions extending from the stomach to neighboring organs. In all cases with symptoms of chronic ulcer the author recommends a Wassermann test, and, if the test be positive, the patient should at once be placed under anti-luetic treatment.

In the diagnosis of chronic ulcer the author has been assisted most by a carefully elicited history of the onset and course of the symptoms. Definite pain in the region of the stomach has been the most

common symptom. Hunger pain seems to be more diagnostic of gastric than of duodenal ulcer. Examination of the stomach contents for HCl, blood, and motility should be repeatedly performed. In the absence of other causes for hæmorrhage, blood in the stools points very strongly to ulcer or cancer.

The X-ray has been of great use in the diagnosis of gastric disease. The author believes that every suspected case should be subjected to a fluoroscopic examination and repeated radiographs should be taken.

Cancer of the stomach comes to the surgeon in the majority of cases in the incurable stage. Whenever it is possible, however, and the condition of the patient will warrant it, an extensive attempt should be made to remove all of the cancerous tissue. In many cases where there is a recurrence the symptoms are markedly ameliorated by an extensive operation and the life of the patient is considerably prolonged.

J. H. SKILES.

Janeway, H. H.: Gastroscopy. *J. Am. M. Ass.*, 1913, lxi, 1339.

By Surg., Gynec. & Obst.

In considering carcinoma of the stomach, only one question presents itself: Is gastroscopy an efficient and practical method of viewing the interior of the stomach? The author presents an instrument that is efficient in that it permits details of the gastric mucosa to be seen with clearness, and practical in that it does not involve too much suffering or inconvenience on the part of the patient. The success of this gastroscope depends upon the lamp and lens system, the former being as large as the caliber of the instrument and large enough to illuminate the whole of the distended stomach.

Röntgenoscopy is valuable in conditions around the pylorus, where the largest number of ulcers and cancers originate. The gastroscope furnishes information regarding the vertical portion, which includes the region occupied by a large number of pathological conditions, particularly those which are difficult to recognize clinically. Thus gastroscopy supplements other objective methods of examination.

Some discomfort is generally experienced, and the apprehension felt makes it desirable that the examination be conducted under general anæsthesia. Intratracheal insufflation makes anæsthesia during gastroscopy possible, and by the use of nitrous oxide and oxygen the last objection to the routine use of this instrument in stomach conditions is removed, when it may mean so much to the patient. The procedure is devoid of danger, as the operator's eye is always on the distal end of the instrument and it is never allowed to progress unless the folds of mucous membrane fall away in front of it.

If gastroscopy and röntgenoscopy are made a routine measure in cases in which carcinoma is possible, in a large proportion of cases carcinomata will be found, in the author's opinion, in an early stage when it is possible to do something for them.

E. K. ARMSTRONG.

Hertz, A. F.: The Cause and Treatment of Certain Unfavorable After-Effects of Gastro-enterostomy. *Ann. Surg.*, Phila., 1913, lviii, 466.

Hertz has been consulted by a considerable number of patients upon whom gastro-enterostomies had been performed, most commonly for duodenal ulcer. They complained of symptoms which he divides into two groups. The first group is occasioned by too rapid drainage of the stomach, recognized by a very unpleasant sense of fullness occurring during each meal, localized slightly lower than the position where the pain or discomfort was felt before the operation. This is accompanied in many cases by slight diarrhoea after each meal. In all patients suffering from this group of symptoms it has been found by the X-rays that the stomach was small and hypertonic, and that passage of food out of it through the operation stoma was extremely rapid. In all cases little or nothing passed through the pylorus. The sense of fullness in these cases is due to a distention of the jejunum from the rapid passage of food from the stomach. Treatment consists in having the patient lie down for half an hour or an hour immediately after each meal, as the stomach empties itself much less rapidly when this posture is assumed. Some preparation of pancreatic ferments to compensate for the deficiency of the normal secretions, and small doses of belladonna to relax the involuntary muscle fibers of the intestines, should be given half an hour before meals. The author suggests that the condition might be prevented by making a somewhat smaller stoma when the gastro-enterostomy is performed.

The second group of cases are those of extreme dilatation of the stomach in which the situation of the gastro-enterostomy opening is above the upper level of the gastric contents, rendering passage of the stomach contents through the stoma a mechanical impossibility while the patient is in a vertical position. In such cases an effective gastro-enterostomy must have the stoma so situated that it remains in the most dependent part of the stomach even when the vertical position is assumed.

ROBERT H. IVY.

Leriche, R.: How Is It Possible to Exclude the Pylorus and the Duodenum (Comment faut-il réaliser l'exclusion du pylore et du duodénum)? *Lyon chir.*, 1913, x, 27. By Journal de Chirurgie.

This article is a vigorous protest against Parla-vecchio's method of excluding by ligature. The author believes that the only way to obtain a complete, final, and sure exclusion of the stomach or intestine is to sever the bowel and close each end separately, as in the old method of Doyen and von Eiselsberg. This operation is neither long nor complicated, especially if it can be performed in the region of the pylorus. By it alone can interruption of the gastro-intestinal circulation be assured.

If a ligature be used, even if it be sewed in, it gradually cuts through the wall and passes out through the intestine, and the closure or stricture is

not permanent. This fact was established by the work of Oliva, Paganelli, and Tappeiner, the findings of Randisi to the contrary notwithstanding.

Leriche reports two cases. The first was that of a man thirty-seven years of age with symptoms of duodenal ulcer. A posterior gastro-enterostomy was performed and the pylorus was tied off with No. 2 catgut. The immediate result was excellent; the pain disappeared and the stomach emptied itself immediately. Two months later, however, all of the symptoms returned and a radiograph showed the food passing through the pylorus. A second gastro-enterostomy was then performed and the pylorus severed, the ends being closed separately.

The second case was that of a woman sixty-three years of age. A large cicatricial ulcer of the lesser curvature involved the pancreas. Resection was impossible. The stomach was ligated near the ulcer and an anterior gastro-enterostomy with a button performed on the upper segment and a jejunostomy between the loops. The patient improved, but radioscopy showed that the artificial biloculation was not maintained and the stomach emptied itself through the pylorus.

According to the author, the only indication for Parlavocchio's operation is irremovable ulcer of the middle of the stomach. CH. LENORMANT.

Monrad: Personal Experience with Acute Invagination of the Bowel in Children (Persönliche Erfahrungen über akute Darminvagination bei Kindern). *Kong. Verhandl. d. Nord. chir. Foren.*, Kopenh., 1913.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author strongly advocates non-operative treatment. He speaks first of the Hirschsprung-Wichmann method. A narcotic is given to facilitate the injection of an enema. This is followed by massage of the invagination. This method has the disadvantage that frequently after giving the enema the tumor disappears so that it cannot even be felt, and massage can be done only in a haphazard way. For this reason Monrad recommends his own method, which consists of steady traction at the site of invagination directly through the abdominal wall. The bowel is flushed out well from below after employing the method.

The technique is as follows: The patient is chloroformed in order to palpate the tumor accurately. If the invagination is in the colon the lower segment is compressed with both hands for a few minutes, then it is grasped in the left hand while the upper portion is seized with the right. The disinvagination usually occurs quite readily. If this is not the case, repeated attempts may be made at intervals of 15 minutes. After this procedure a high enema is given, which in itself often disinvaginates the gut in otherwise unsuccessful cases, or it completes a partially successful attempt. In cases involving the small intestines and in which the two segments cannot be readily distinguished, pressure may be exerted alternately on both ends of the tumor. If

this method does not prove satisfactory in any given case, operation becomes necessary at once. The results were as follows: Of 51 cases, 45 were treated by non-operative methods, of which 37 cures were successful, that is, 82 per cent. The condition occurred 38 times in the large bowel with 92 per cent successful results, 3 times in the small bowel with one failure.

It is often difficult to determine whether the reduction has been successful and to tell whether a slight thickening is due to infiltration of the gut or to partial reduction. If the bowels move freely after apparent reduction, success is almost assured, but often this does not occur for 24 hours. Vomiting a little bloody mucus and a rise of temperature are not unfavorable symptoms, but continued attacks of colic and the reappearance of a tumor are serious signs. Contra-indications are severe meteorism and peritonitis. Ileo-colic and double invaginations are excluded from non-operative procedures. Unfortunately these cases are hard to differentiate. The duration of the condition does not play a very important part as regards the method employed.

Injury directly due to attempts at reduction is rare. The stripping of the serosa is undoubtedly less than in laparotomy and is not so harmful. It is difficult to determine whether in unsuccessful cases the most favorable time for operation has passed. This can only be decided by comparison of the results of a number of non-operated cases with those operated upon at once. The author feels encouraged, after comparing statistics, in using the non-operative method with limitations as indicated.

In the discussion, LÖFBERG advocates the operative procedure, with a mortality of 25 per cent. Only 4 cases were treated by manipulation, and these all had to be operated upon later. The 5 deaths were all due to intoxication. He prefers surgical treatment for the following reasons: 1. Manipulation is often unsuccessful and requires special skill and practice. 2. It is difficult to tell whether reduction is complete. 3. The injuries to the serosa are frequently extensive and require suturing. 4. The cause of the invagination cannot always be treated by external methods. 5. Faulty diagnosis is frequently detected only by laparotomy. 6. The operative procedure is controlled by sight, while the other is a blind method.

TSCHERNING intends to attempt nonoperative treatment more than he has done in the past, although he is not very strongly inclined toward it. The good results of Monrad seem to him to depend in part upon the selection of suitable cases.

ROVSING thinks the statistics of the good results and low mortality in non-operated cases demand consideration. Nevertheless, he operates on all cases in which one attempt at reduction fails. He has had good results by following this principle: 11 cases with 2 deaths.

ESCHEN injects oil (ol. rapæ) to lubricate the oedematous inner segment of the invagination. He allows as much oil as possible to flow into the bowel

from a height of 1 m. The oil is massaged through the descending colon, and then the tumor is massaged. Sometimes reduction takes place with an audible snap. The method has given good results in Eschen's cases. It is usually carried out without anesthesia.

AAGE KOCK.

Collins, C. N.: Two Cases of Obstruction of the Bowels from Unusual Causes. *Surg., Gynec. & Obst.*, 1913, xvii, 512. By Surg., Gynec. & Obst.

The interest in these two cases lies in the diagnostic problems involved. In the first case the patient had had a right inguinal hernia for ten years. It became strangulated, but after a few attempts it was reduced. The vomiting and pain were not relieved, and there was tenderness on pressure over the right lower abdomen, so a diagnosis of appendicitis was made. An operation revealed a fibrous band across the internal inguinal ring. The loop of bowel came out on one side of the band and was pushed back on the other side, leaving it hanging over and obstructed by the narrow fibrous band.

In the second case the patient was 50 years old, and she had not menstruated for two months. She was taken with vomiting and pain in the abdomen. She had an oblong tumor in the left lower abdomen, and had passed some bloody mucus from the rectum. A rectal examination was negative. A diagnosis was made of an extra-uterine pregnancy, but operation revealed an intussusception caused by a lipoma attached by a pedicle to the mucous membrane of the cæcum.

Kerr, H. H.: Intestinal Anastomosis; with a Report on the Aseptic Basting-Stitch Method. *Surg., Gynec. & Obst.*, 1913, xvii, 490.

By Surg., Gynec. & Obst.

Kerr presents his experience with this method since the report of the experimental work by himself and Parker in 1908. "It may be defined as an easy and rapid method of suturing, applicable to any form of intestinal anastomosis, whether circular, lateral, or end-to-side, whereby the immediate formation of a patent stoma may be accomplished without operative opening of the intestinal lumen and without the introduction into it of any instrument or ligature."

Two pairs of crushing clamps are placed in apposition across the bowel at an angle of 45 degrees to its axis on either side of the portion to be resected. The bowel is divided by the cautery or knife between each pair of clamps. The proximal and distal stumps closed by the clamps are now ready to be joined. The basting-stitch is a Cushing continuous stitch of Pagenstecher thread placed across each bowel end with the loops between the stitches passing over the clamps. The first and last stitches at the mesenteric and free borders run parallel to the axis of the bowel, the intervening ones run parallel to the clamp and across the axis of the bowel. When the blades of the clamp are separated and withdrawn from under the loops of the basting thread,

and when the latter is drawn taut, the edges of the incision are automatically inverted and held firmly pressed together in a straight line without any separation of the lips of the opening having occurred. The two ends so closed are held in apposition suspended on their tight basting threads, and the anastomosis is made with great ease and rapidity, according to the author. Twenty-six cases of aseptic anastomosis, including pylorectomy and gastro-enterostomy, are appended, in none of which was there leakage or stenosis. The author claims "that the basting-stitch method of intestinal anastomosis is rapid, simple, safe, and aseptic."

Codman, E. A.: Observations on a Series of Ninety-Eight Consecutive Operations for Chronic Appendicitis. *Boston M. & S. J.*, 1913, clxix, 495. By Surg., Gynec. & Obst.

Before starting this series the author wrote down ten distinct objects of the investigation. Each case operated upon had been previously diagnosed as chronic appendicitis and this diagnosis had been agreed to by the author.

Of the 98 cases only 61 appendices showed, at operation, evidences of ever having been inflamed. And of these, 50 should not really be included, because they had definite histories of classical acute attacks. Therefore he scouts the idea of anyone being able to make a diagnosis of chronic appendicitis with any reasonable degree of certainty in cases which have not had a previous acute attack. This statement is further substantiated by the fact that he and his colleagues operated on an equal number of abdominal cases under other diagnoses than chronic appendicitis, and yet a "chronic appendix" was the only abdominal lesion they could find.

Another consecutive series of 100 laparotomies which were done for other lesions (chronic appendicitis not even being mentioned) showed 71 "chronic appendices." He considers the X-ray of considerable help in the diagnosis of chronic appendicitis, especially in differentiating the condition which he calls pseudo-appendicitis or ileo-cæcal anomalies.

Anoci-association was used on 25 cases and is considered by the author a step toward the evolution of a perfect technique. When this becomes so sure that no deaths, no pain, no vomiting, no hernia, no complications of any kind occur, then the arguments for routine appendectomy will be justified.

In conclusion he hopes for a revision of the subject of "chronic appendicitis" and a new nomenclature and suggests the following:

1. Terminal obliteration, a harmless type.
2. Strictured or vicious appendix.
3. Kinked or potential appendix.
4. Chronic appendices, those in which the lumen is patent but where the X-ray shows retained bismuth hours or days after the rest of the meal has passed. They include the catarrhal, the lymphoid, and the minor kinks and twists, but their lumen is still free, so that when their internal tension rises the

discharge can escape into the cæcum and only cause a slight attack of indigestion. R. W. FRENCH.

White, G. R.: Contracture of the Psoas Parvus Muscle Simulating Appendicitis. *Ann. Surg.*, Phila., 1913, lviii, 483.

White has found seven cases simulating appendicitis, with rigidity of the right abdominal muscles, localized pain, excessive tenderness, and palpable tumor, due to a contracted psoas parvus tendon.

He strongly urges a search for the psoas parvus muscle when the abdomen is opened and a normal appendix found. A division of this tendinous band gives relief. He prefers the retroperitoneal route because the retracted peritoneum keeps the intestines out of the way, but the transperitoneal route can also be resorted to easily.

The iliac artery is well to the inner side and the nerves deeper and to the outer side of the tendon, so there is little danger in the operation. In all of his series of seven cases, pain, tenderness, and tumor were present. In two the pain came suddenly and was referred to the leg. Fever and digestive disturbances were absent.

Chronic and tonic spasms of the iliopsoas have been reported in neurasthenics. In the author's series only one could be called neurasthenic. The psoas parvus is a rudimentary muscle attached above to the last dorsal and first lumbar vertebrae, and below to the iliopectineal line of the pelvis. In all of the seven cases reported the psoas parvus was represented by a tense fibrous band along the inner border of the psoas magnus and receiving additional bands from each neighboring vertebra.

In all of his cases immediate relief followed the division of this tendinous band.

LEWIS B. CRAWFORD.

George, A. W., and Gerber, I.: The Value of the Röntgen Method in the Study of Chronic Appendicitis and Inflammatory Conditions, Both Congenital and Acquired, About the Cæcum and Terminal Ileum. *Surg., Gynec. & Obst.*, 1913, xvii, 418.

By Surg., Gynec. & Obst.

This is a discussion from the röntgen point of view of a series of cases, all of which had symptoms of either stomach trouble or chronic constipation. The röntgen examination showed the cause to be definite surgical disease in the right lower quadrant, and later operations confirmed the diagnoses. The cases are in five general groups.

1. *Chronic Appendicitis*: This is shown first by ileal stasis, which must consist of stasis in the ileum for 24 hours or longer. More important than this is the actual demonstration of bismuth within the lumen of the kinked and adherent appendix. The authors claim to have demonstrated the appendix in about seven cases out of every ten examined, and to be able usually to differentiate normal from pathological appendices.

2. *Lane's Kink*: Here ileal stasis is also found, but more important is the demonstration of the

fixed and distended terminal loop of ileum. Fluoroscopic manipulation plays a very important part in the diagnosis of this condition.

3. *Jackson's Membrane or Membranous Pericolitis*: This is usually accompanied by ileal stasis and some obstruction in the cæcum and ascending colon. The real diagnostic feature, however, is the demonstration of adhesions by manipulation under the fluoroscope, or, what is even more important, by the presence on plates of a peculiar mechanism of filling which has been observed only with these percolitic adhesions. As the ileal contents empty into the cæcum and ascending colon, a pull is gradually exerted upon the adhesions, and the proximal transverse colon is pulled down toward the ascending colon, finally giving the "double-barrel shotgun" effect. The presence of this filling mechanism serves to differentiate Jackson's membrane from simple colonic dilatation (typhlatony).

4. *Adhesions*: Many of the cases were found to have various adhesions of the intestinal parts as the result of pelvic inflammation, or old ulcer, appendicitis, gall-stones, etc. In these cases obstruction and ileal stasis are not as valuable diagnostic points as the actual demonstration by manipulation of the effect of the adhesions.

5. *Cæcum Mobile*: This can be demonstrated readily by the röntgen ray, and incidentally the diagnosis of left-sided appendicitis can be confirmed.

Quimby, A. J.: Differential Diagnosis of the Appendix, by Aid of Röntgen Ray. *N. Y. M. J.*, 1913, xcvi, 697.

By Surg., Gynec. & Obst.

The author bases his paper on the results of 141 röntgenological examinations, both fluoroscopical and radiographical, of the lower right abdomen. A bismuth subcarbonate or barium sulphate (C. P.) meal is given and the patient is observed at intervals for at least 4 to 6 days.

He classifies appendices according to function, position, and shape as follows: (1) Functionating or non-functionating; (2) fixed or movable; (3) ascending, descending, or transverse; (4) straight, kinked, curved, looped, or clubbed.

A functionating appendix is one capable of receiving and discharging fæces. The author expects the appendix to be filled with bismuth any time after 6 hours, but often he observes that this does not occur until after 24 to 30 hours. Since the colonic peristaltic wave originates in the appendix, it can be assumed that the discharge of its contents is governed by the same rules controlling the function of the large bowel. If the bismuth is not discharged within 36 or 48 hours, it can be assumed that the function is disturbed and this class furnishes the non-functionating type, which the author always considers pathological. In some cases bismuth has been found in the appendix several weeks after ingestion of the bismuth meal.

Palpation during fluoroscopy enables one to determine whether the appendix is fixed or movable. The author suggests the necessity of first locating

the cæcum. The hand should be passed downward until the cæcum slips upward under the finger, this enabling the examiner to study the attachment of the appendix.

As a rule the ascending type is adherent and the descending free and normal. Abnormal appendices are frequently associated with abnormalities of the cæcum and colon; as adhesions, mesenteric bands, and angulations involving colon conditions which favor stasis.

The determination of the shape of the appendix requires a knowledge of the relative values of the diffusion of the shadow cast by the various segments. Stereoscopic studies are suggested as of value in determining the exact relations to surrounding structures. It must be kept in mind that malposition of the cæcum produces unusual shaped appendices. The author's conclusions are as follows:

1. When there is chronic constipation due to delayed or inhibited peristalsis, the appendix is usually diseased.

2. The X-ray is essential in the differential diagnosis of the appendix.

3. When a pathological condition of the appendix is suspected and there are few symptoms, an X-ray examination is essential.

4. When the appendix is tied up in a mass of adhesions, an accurate finding of the appendix enables the operator to rapidly locate it on operation.

5. Accurate determination of conditions typifying appendicitis should be made before operation.

6. When there are obscure symptoms in the abdomen which cannot be traced to a definite organ, an X-ray examination of the appendix may show that it is adherent to some distant organ.

WM. A. EVANS.

Fallon, M. F.: An Anatomical and Surgical Study of Pericæcal Membranes. *Boston M. & S. J.*, 1913, clxix, 600. By Surg., Gynec. & Obst.

Fallon discusses Jackson's membrane, cæcum mobile, the physiology of the first half of the large intestine with treatment of pathological stasis therein, and the relation of pericæcal membranes to appendicitis, especially of the family type. Numerous authors are quoted and a list of references is appended.

Fallon believes with Blake that Jackson's membrane is a congenital, normal, constant structure. He holds that it is not a membranous pericolicitis, and that it is not disabling to the cæcum and ascending colon. He does not doubt that there is a definite pericolicitis but it has no relation whatever to the so-called Jackson's membrane. Virchow was the first to give a clear description of this pericolicitis, and he ascribed it chiefly to fæcal stasis. The chronic type of the affection is illustrated by the following case. In a married woman 42 years of age, with a history of constipation and right abdominal pain, a diagnosis of high appendix was made, but operation showed only the right flexure of the colon and its omentum adherent to the anterior parietal perito-

neum over an area the size of the palm of an adult's hand. Adhesions were freed. The wall of the colon was much thickened and its serosa was injected and uneven. A piece of the affected tissue was excised and reported by the pathologist as chronic inflammation. Two months after leaving the hospital the patient was still free from her former symptoms.

The cæcum mobile of Wilms is not in itself pathological. It is due to the presence of an ascending mesocolon, a less frequent form of attachment of the ascending colon. Treves found it in 26 per cent of his cases, and Fallon has found it in 24 per cent of one hundred subjects whom he has examined. Stasis in the first half of the large intestine is to a certain extent physiological. When it becomes pathological, the causes are frequently to be found in faulty habits, and hygienic and dietary measures are as a rule indicated.

In an investigation of the relation of pericæcal membranes to appendicitis, Albrecht found in the cadavers of 15 per cent of 500 children under six years of age, kinks and twists of the appendix due to these membranes sufficient to give opportunity for interference with drainage and the possibility of future appendicitis. He says there can be no doubt that such congenital anomalies are hereditary, and consequently may run in families. Fallon believes this to be true and submits the following as evidence. An investigation of 200 patients operated upon for appendicitis showed that twenty-four were members of families in which one or more members had been operated upon for appendicitis. In one family the grandmother had died of appendicitis, an uncle had had peritonitis resulting from appendicitis, five brothers and one sister of the patient had been operated upon for appendicitis between the ages of twenty and thirty, and the only remaining member of the family, a sister, was known to have chronic appendicitis.

JOHN BRYANT.

Erdmann, J. F.: The Colon: Its Malignancies. *Med. Rec.*, 1913, lxxiv, 611.

By Surg., Gynec. & Obst.

Since the author's last report of 45 cases, he has had forty more. In these the cæcum was involved three times, the sigmoid eleven, rectosigmoid thirteen, rectum eight, transverse colon three, and the perirectal tissue two. The youngest patient was 26 years old. Each case was well advanced when seen by him. He ascribes the failure of early diagnosis of these conditions to modesty on the part of the patients in speaking of the ailment and to refusal to submit to an examination. Another factor is the too readily eased conscience of the physician in not examining such patients, accepting the diagnosis of the patient or her family physician as to piles, fissures, etc. Many also overlook the importance of a detailed history.

The author then takes up the question of diagnosis in more detail. He states that the early symptomatology is so vague and indefinite that a diagnosis is rare and difficult. The earliest symptoms are

borborygmus, cramps, colic, pains, mucus, blood and pus in the movements, alternating diarrhoea and constipation and a feeling of incomplete emptying of the bowels after a movement. Later there is a painful spot on pressure, evidence of a tumor, and finally an obstruction. In these cases a careful examination of the rectum must be made and an X-ray picture taken following a bismuth meal.

The treatment is discussed in some detail. In far advanced cases it is palliative. This consists in proper catharsis, cleansing the bowel from below, and a diet which does not form excess waste material. The high frequency current has been of value in several cases. Anodynes and local anesthetics are given as a last resort. The palliative operative treatment consists in various types of anastomoses or short-circuiting. Frequently the condition of the lower bowel clears up sufficiently after the operation to permit of a successful excision.

In excising the diseased area, the author advises wide excision owing to the lymphatic and vascular arrangements. In growths of the caecum, the distal 6 to 12 inches of the ileum should be removed, while in the transverse colon one should go to either flexure and pay close attention also to the glands in the transverse mesocolon and the pancreatic area. If metastasis is found in the liver radical excision is contra-indicated. He has found that the resection cases with complete obstruction are better handled in a two- or three-stage operation. The mortality is less. The preliminary colostomy gives a relatively clean bowel to work on and a free vent while the anastomosis is healing. Again an exploration of the abdomen can be made at the same time. Several methods of resection are touched upon. The author is inclined toward the abdominal method, especially in midrectal and rectosigmoidal cases. After removing the tissue, the patient is placed in the lithotomy position and the anus dissected out completely. The distal portion of the bowel is then drawn in and drainage established. The posterior route is also taken up. The author states that he is not satisfied or pleased with the end results of the operations. Recurrences were too early and metastasis and death followed too soon. EDWARD L. CORNELL.

Skinner, E. H.: X-Ray Investigation of Habitual Constipation. *Surg., Gynec. & Obst.*, 1913, xvii, 409. — By Surg., Gynec. & Obst.

In an X-ray examination by means of bismuth oxychloride chocolate meals and barium sulphate enemas, Skinner prefers that the patient approach the examination in his usual alimentary condition, because colon motility is altered by previous cathartics or enemas. After describing the normal colonic motility and anatomy as seen by the X-ray, he divides the habitual constipations as follows: (1) Disturbances of motility by extrinsic pathology or intraluminal organic pathology occluding the lumen and thereby the progression of the colonic content, such as neoplasms; (2) disturbances of motility by extrinsic pathology or extraluminal

adhesions, such as kinks, pericolic membranes, diverticulosis, etc.; (3) disturbances of motility by purely functional disturbances, such as hypermotility, hypertonus, or from an atypical anatomical position of the colon from faulty mesenteric development or faulty colonic rotation.

The subdivisions under functional disturbances are: (1) Hypermotility of the colon; (2) chronic obstipation of the ascending-colon type, or caecal constipation; (3) the pure ptosis constipation with low hepatic and splenic flexures and general colonic and bodily asthenia and atonicity; (4) the constipation of the distal colon from lessened rectal reflex, otherwise becoming generally known as dyschezia; and (5) hypertonus.

Skinner's conclusions are as follows:

1. The stomach and colon are not chemical retorts but functioning motile organs.
2. The position of the gastro-intestinal tube is not so concerning as its function.
3. The demonstration of actual anatomic alterations of function demand surgery, but the surgical treatment of atony is problematical.
4. The subject of the habitual constipation of atonic and congenital origin is a matter of sociological as well as medical investigation.
5. The demonstration of the gastro-intestinal function and pathology by the X-ray is a simple matter compared to the problem of its cure.

LIVER, PANCREAS, AND SPLEEN

Whipple, G. H., and Goodpasture, E. W.: Acute Hæmorrhagic Pancreatitis; Peritoneal Exudate, Non-Toxic and Even Protective Under Experimental Conditions. *Surg., Gynec. & Obst.*, 1913, xvii, 541. — By Surg., Gynec. & Obst.

The conclusions are derived from experiments done upon dogs. The acute pancreatitis was produced by injection of pig's bile into the pancreatic duct with aseptic precautions. When acute pancreatitis was produced in two animals at the same time for the sake of parallel observations concerning the effect of exploration, removal of fluid, injection of exudate, etc., every effort was made to cause similar degrees of pancreatic injury by using the same rapidity of injection, the same amount of bile per pound of body weight, the same conditions of temperature, etc.

The results may be summarized as follows: The peritoneal exudate in acute hæmorrhagic pancreatitis contains no toxic substances. It is harmless when injected intravenously or intraperitoneally in large amounts into normal dogs or those suffering from acute pancreatitis.

The ferments which escape from the injured pancreas are rapidly neutralized, and this peritoneal exudate is usually free from proteolytic ferments and contains the same amount of lipase as does the blood serum.

The hæmorrhagic peritoneal exudate may be looked upon as having a neutralizing action and

appears to benefit rather than injure dogs suffering with acute pancreatitis.

Dogs with acute hæmorrhagic pancreatitis which are subjected to exploration and removal of peritoneal exudate will appear sicker than control dogs left undisturbed.

The pancreas can survive remarkable degrees of injury; and this factor of safety should always be considered in drawing deductions from any surgical procedure. Its capacity for repair seems greatest when it is left undisturbed in a closed abdomen.

Stevenson, E. S.: Splenomegaly. *Brit. M. J.*, 1913, ii, 847. By Surg., Gynec. & Obst.

The author believes that Banti's disease with its enlarged spleen and anæmia is the last phase of splenic anæmia. Rolleston has summarized the symptoms as follows: Anæmia of the type usually

spoken of as chlorotic, namely, a diminution of red corpuscles with a diminished hæmoglobin content; absence of leucocytosis, usually leukopenia; considerable splenic enlargement which cannot be correlated with any other known causes such as leukæmia, tuberculosis, malaria, syphilis, and hepatic cirrhosis; the long duration of the disease, and the tendency to gastro-intestinal hæmorrhages. The author says that when the spleen is removed in splenomegaly the blood almost immediately improves in quality. This fact makes it appear that the origin of the disease is in the spleen, probably some toxin which destroys or injures the blood cells. Stevenson reports a splenectomy in a girl aged 22 whose red count was 1,500,000 per cmm.; whites 4,568; hæmoglobin 83 per cent. Twelve days after operation red corpuscles were 4,400,000; whites 11,200; hæmoglobin 83 per cent.

SURGERY OF THE EXTREMITIES

DISEASES OF THE BONES, JOINTS, MUSCLES, TENDONS. CONDITIONS COMMONLY FOUND IN THE EXTREMITIES

Cokenower, J. W.: Joint Disease Due to Infection from Other Parts of the Body. *J. Am. M. Ass.*, 1913, lxi, 1450. By Surg., Gynec. & Obst.

We must not forget that, omitting trauma, arthritis is only a symptom of a disease whose source is in some distant part of the body. The presence of a urethritis or a suppurating antrum may be the only differentiating point between two apparently identical joint conditions. For etiology of chronic joint lesions in children one should look for tuberculosis, sepsis, rachitis, congenital syphilis; in young adults, special septic infections from the intestinal or genito-urinary tract; in late adult life, chronic septic infection of the mucous tracts in nearly all parts of the body. Sources of infection which the author has compiled from reports of eminent surgeons are, in order of their importance, tonsils, teeth, genito-urinary tract.

W. A. CLARK.

Jacobs, C. M.: Conservative Treatment of Tuberculous Joint Disease. *Iowa M. J.*, 1913, xx, 189. By Surg., Gynec. & Obst.

The first treatment of tuberculous joint disease in children should be conservative. This implies efficient protective treatment by some form of orthopedic appliance. Operative procedure should be considered only an adjuvant measure and not the primary method of treatment. General hygienic methods, as well as good nourishment, are no less important in joint tuberculosis than in lung tuberculosis.

The mechanical treatment is then discussed, as well as the use of bismuth paste and tuberculin. The writer considers that bismuth paste has no

intrinsic value. Clear vaseline injected into a sinus exerts the same influence as bismuth. The action is mechanical, for by plugging up the sinus it dams back the pus, excludes the air and prevents entrance of pyogenic bacteria — all of which are favorable factors for the filling in of the sinus with granulations. His experience at the Home for Destitute Crippled Children has shown that the greatest success with bismuth paste has been in old sinuses from tuberculous joint disease which have been discharging for one or more years. They could be cured in seven days to two months, but new channels would form as an outlet for the tuberculous débris coming from the seat of disease.

The use of tuberculin has shown little promise in the hands of orthopedic surgeons. It is no longer administered in the author's practice.

In conclusion the author emphasizes the fact that the natural evolution of tuberculous joint disease is toward recovery, but with deformity and ankylosis. Nature can be assisted to effect a cure without deformity and with the minimum loss of function by early recognition of the disease, together with conservative treatment, and long-continued observation.

Ely, L. W.: The Injection Treatment of Tuberculous Joints. *J. Am. M. Ass.*, 1913, lxi, 1453. By Surg., Gynec. & Obst.

Mikulicz in 1881 was probably the first to treat tuberculous joints by injections. He used iodoform, and this is the substance that has since been advocated most strongly and persistently. Fraenkel in 1900 showed that iodoform was not antiseptic when so used, found that bone charcoal and other inert powders were just as good and promoted healing by mechanical irritation. After 32 years' trial and subjection to contradictory clinical experience, iodoform is not widely used in this country. "It is as ir-

rational to attempt to cure a tuberculous joint by injection of the synovial cavity as to cure a tuberculous lung by injection of the pleural cavity."

W. A. CLARK.

Orr, H. W.: Results Obtained in the Non-Surgical Treatment of Tuberculosis of the Joints. *J. Am. M. Ass.*, 1913, lxi, 1370.

By Surg., Gynec. & Obst.

In a study of fifty cases the author found that the active process of joint tuberculosis was prolonged twice as long on an average in the cases operated upon as in the non-operative cases; also that the amount of the deformity was greater by about fifty per cent in the operative cases. The excuse of time-saving is thus proved to be a fallacy, for the patients are disabled longer, either primarily by the operation or secondarily by mixed infection. Among the operative cases of this series there were three deaths, while there were none among the non-operative cases. The conclusions are that the best results are obtained by conservative treatment, and that disability and deformity are much less in patients so treated.

W. A. CLARK.

Midelton, W. J.: Some Notes on Arthritis Deformans; with an Analysis of Fifty Cases, Treated by Means of Continuous Counter-Irritation. *Med. Press & Circ.*, 1913, xcvi, 422.

The author considers continuous counter-irritation the panacea for arthritis deformans. The principal methods for carrying this out are:

1. The blister, followed by savin ointment.
2. Acupuncture, with counter-irritant drugs such as cantharides, croton oil, methyl salicylate, oil of mustard, etc.
3. The actual cautery,—preferably the galvanocautery.

The first two are the most efficacious, because of the exudation which takes place. Applications are made in the neighborhood of the spinal column.

So efficacious is this treatment that patients, with few exceptions, who have been treated for years by such means as natural spa waters, baths of many kinds, massage, exercises, ionization, residence in Egypt, etc., without lasting benefit, have improved. Often but one or two blisters have produced great improvement.

CHARLES M. JACOBS.

Fuller, E.: The Cure Through Genito-Urinary Surgery of Arthritis Deformans and Allied Varieties of Chronic Rheumatism. *Med. Rec.*, 1913, lxxxiv, 691.

By Surg., Gynec. & Obst.

Fuller reports upon a total of 346 cases operated upon by seminal vesiculotomy in which he had but one death occurring in his last series of 65 cases, due to interstitial nephritis. In more recent observations upon the bacteriology of the material obtained from the seminal vesicles at operation, Larkin, the pathologist, has not discovered the gonococcus in chronic conditions, but uniformly the streptococcus.

The complement-fixation test in the acuter forms

of the affection was usually positive, and oftentimes in cases showing a marked tendency to chronicity the test would be positive a year or two after the time that gonorrhœal infection had occurred according to the clinical history. In one case a weakly positive test was found five years after the stated occurrence of the infection. In the most chronic cases, however, where there is evidence that there had been no recurrence of the gonorrhœal infection, seminal vesiculitis persisting as a resulting lesion, the fixation-test was found to be negative.

The streptococcus could always be counted upon as existing in such cases. The prognosis as regards the cure of absorptive rheumatism through seminal vesiculotomy is decidedly good.

The point in technique, in the operation Fuller mentions, is not to allow premature external closure of the wound, but to maintain drainage tubes in position until the deep portion of the wound has thoroughly granulated and healed. Another essential surgical point lies in the thorough and free opening throughout the entire length of the affected seminal vesicles.

Martin, I. A. M.: Discussion on the Diagnosis and Treatment of Injuries of the Knee-Joint, Other Than Fractures and Dislocations. *Brit. M. J.*, 1913, ii, 1070.

By Surg., Gynec. & Obst.

The author emphasizes the point that the knee-joint is not merely a hinge joint. At the end of extension a certain amount of rotation of the femur takes place on the tibia, for the inner condyle's articular surface is longer by one-third than the corresponding surface on the external condyle. Therefore the last one-third of the act of extension is really a screwing inwards of the femur on the tibia. In the position of completed extension there is no lateral motion at the knee-joint. However, in the varying degrees of flexion varying degrees of lateral motion are allowed. It is the author's belief that for this reason it is only in flexion that tearing or splitting of the semilunar occurs. This belief is based upon personal experience with 449 operated cases. For rupture of the ligamentum patellæ the author advises suture followed by rest in the fully extended position for eight weeks. Full flexion is not permitted for another two months. For rupture of the ligaments where forcible hyperextension has been the cause, he recommends splinting in the slightly flexed position for twelve or more weeks, followed by massage and exercise. Where the internal lateral, external lateral, or anterior ligaments are torn, he thinks the best treatment is suture.

Rupture of the crucials does not readily yield to operative treatment, and these patients are best treated by a properly fitting knee brace. Martin removes loose bodies without general anæsthesia. He first fixes the body with a needle and then, under local anæsthesia and strict asepsis, makes a small incision into the joint and removes the body. In a large number of cases of injury to the semilunar cartilages, a definite splitting or tearing occurs. Out

of a total of 509 cases operated upon by Martin only 38 were external. He explains this on anatomical grounds, saying that the external cartilage has a much looser attachment than the internal. Consequently, supposing it becomes engaged between the external condyle and the upper surface of the external tuberosity of the tibia and is then dropped toward the center of the joint, stretching of its connections rather than splitting of its own substance occurs. In the case of the internal semilunar, which has a close connection with the internal lateral ligament and the capsule, a tear would be more likely to occur.

A definite fracture of the cartilage may be caused by sudden extension of the knee while the loose semilunar cartilage is held between the joint surfaces. Martin says the treatment of torn semilunar cartilages depends largely upon the social position of the patient. A cast from toes to upper thigh may be tried. He prefers to operate seven to ten days after an attack. He uses chemical sterilization rather than dry. A tourniquet is used, the knee being thoroughly flexed. A transverse incision is made, running (in the case of the internal cartilage) from the inner border of the ligamentum patellæ backward along the line of the joint for two inches. Care is taken not to cut the internal lateral ligament. He aims to remove the entire cartilage. He uses no splint as an after dressing and encourages the patient to move the knee. No fingers are allowed to enter the wound at any time during the operation, even though he and his assistants wear rubber gloves. Ten days later his patients usually walk without any support.

Walton maintains that injuries of the semilunar cartilage are brought about by hyperextension of the knee and not by a rotatory movement while the knee is in semiflexion. Out of 77 cases in his hands 73 were of the internal cartilage.

FRACTURES AND DISLOCATIONS

Heineke, H.: Spontaneous Rupture of the Extensor Longus Pollicis Tendon, After Typical Fractures of the Radius—the So-Called Drummer's Paralysis (Über Spontanrupturen der Sehne des Extensor pollicis longus nach typischen Radiusbrüchen und über die sog. Trommlerlähmung). *Deutsche Ztschr. f. Nervenheilk.*, 1913, xlvii, Festschr. v. Strümpell, 229.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The so-called drummer's paralysis, according to Heineke, depends on the spontaneous rupture of the extensor longus pollicis tendon. The rupture is quite accidental and follows a weakening of the tendon by necrotic inflammatory changes due to repeated traumatism. But even after severe single injury, spontaneous rupture of the tendon in question can take place. The author has seen two such cases in which, four and eight weeks after perfect union of typical radius fractures, the tendon broke after the function of the hand was almost normal and the patients had resumed their regular occupations. It is assumed that in these cases the healthy

tendon was injured at the time of the fracture and that a circumscribed portion gradually died, and later the tear occurred at the necrotic portion. The tendon could not have been injured by the bony fragments, as in neither case was there any displacement. It is probable that at the time of the fall the thumb was forcibly bent backwards and abducted so that the tendon was injured where it passes beneath the annular ligament of the wrist. Heineke successfully united the tendon in one of the cases by freshening the torn ends. The other case refused operation. Nevertheless, the author recommends suturing the peripheral end of the tendon either to the extensor tendon of the index finger or to the tendon of the extensor carpi radialis longior.

JUNG.

Roth, O.: Fracture of the Neck of the Femur, and the Isolated Fractures of the Trochanter—Major and Minor (Der Schenkelhalsbruch und die isolierten Brüche des Trochanter Major und Minor). *Ergebn. d. Chir. u. Orthop.*, 1913, vi, 109.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author does not approve of the usual division of fractures of the neck of the femur into intra- and extracapsular fractures. He follows Kocher's classification, in which the following are recognized: (1) Fractura subcapitalis, which fracture extends to the head; (2) fractura colli femoris intertrochanterica, the fracture which lies directly above the mass of the trochanter; (3) fractura peritrochanterica, the line of fracture running obliquely through the trochanters. (4) The combined fracture, which occurs when the neck becomes impacted in the trochanter in a fracture intertrochant. Fracture of the neck of the femur occurs chiefly in old age and is more frequent in the female sex. Its frequent occurrence is due to osteoporosis, which is brought on by old age. Osteoporosis also affects Adam's curve, whereby the angle made by the head and neck of the femur, which usually is under 127 degrees, approaches more and more a right angle. With such great leverage, the effect of direct violence is greater. The röntgen era has shown that this fracture is not such a rare occurrence in youthful individuals. In 1903 Hoffa collected 87 cases. Usually these were cases of separation of the epiphysis from the head. According to Kocher, growth along the epiphyseal lines produces a diminished resistance.

Fractura subcapitalis is produced by a fall on the trochanter, the head, which is held firmly by the lig. Bertin, being pressed against the acetabulum; or it may be caused by outward rotation of the leg. Fractura intertrochanterica is also produced by a laterally active force with the leg in the adducted position; it is an extension fracture, due to a fall backward. In the combined fracture the pointed Adam's curve wedges against the trochanteric mass and splits this asunder. The diagnosis is based, outside of the röntgen picture, on shortening, outward rotation, pain on pressure or jarring, and limited excursion of the tro-

chanter. All these symptoms may be present, depending on the form and impaction of the fracture. Sometimes infractions occur in children, which later produce pain and deformity. At times a second trauma converts an incomplete into a complete fracture. The prognosis is not favorable as regards life and function. Disagreeable complications, such as pulmonary affections, urinary disturbances, and circulatory disorders, which may vitiate the result, are not rarely observed. The functional result is to be attributed to the extremely slight tendency to healing in fractures of the neck and also to faulty positions. Usually there is only fibrous union, which fortunately suffices for ordinary purposes. Impacted fractures, especially the intertrochanteric, heal best. In subcapital fractures a disappearance of the neck is often observed. Subcapital fractures heal with the greatest difficulty, because of poor nutrition. On the other hand, fractures in the trochanter region heal smoothly, if somewhat slowly. Impacted fractures give the best results. The treatment depends on the constitution of the patient.

If hypostatic pneumonia is feared, the patients should be taken out of bed as soon as possible. These patients are, as a rule, doomed to use a crutch or cane for their remaining days. In most cases Bardenheuer's extension gives the best results. The leg is placed in an abducted position, with inward rotation applied below the knee. Active movements of the upper extremities are used in elderly people to strengthen the heart. Impacted fractures are partially loosened under narcosis to overcome the longitudinal displacement, and outward rotation is used. Strong abduction, as emphasized especially by Lorenz, is of importance. If it is desired to get patients out of bed early, they may be permitted to walk with suitable walking bandages (Kocher, Schanz, Bender). Open operations have been recommended for the purpose of better adaptation of the fragments. Nails, ivory pegs, and screws have been driven into the trochanter (Langenbeck, Franz König, Trendelenburg, Kocher), and bone suture has also been tried. Of further importance is the treatment of non-impacted subcapital fractures. Here Kocher advises resection of the head if the diagnosis is certain, while Fritz König sutures the fragments with aluminium-bronze wire through a Hueter incision.

The majority of physicians evidently try extension first, and if this fails, decide to remove the head; others try a replacement by open operation (R. Whitmann). Fracture of the greater trochanter is brought about by a fall on the hip; the fragment may be pulled upward by the muscles a distance of 6 cm. The injured leg is in the position of adduction and inward rotation. The treatment consists of extension with strong abduction and outward rotation of the leg. Fracture of the lesser trochanter is more rare. It is produced by a powerful pull of the ilio-psoas. The diagnosis is founded on the presence of an extravasation in the region of the lesser trochan-

ter, outward rotation of the leg, and on Ludloff's symptom, i.e., the patient cannot raise his leg while sitting, but on lying down can raise it without restriction. These fractures all heal in the dislocated position, but leave no disturbed function. Treatment is of no consequence as regards healing, stretching of the leg with outward rotation with the thigh slightly bent being probably the most useful treatment.

VORSCHÜTZ.

SURGERY OF THE BONES, JOINTS, ETC.

Rovsing, T.: A Case of Transplantation of Bone from One Patient to Another (Homoplastic) to Supply the Lower End of the Femur (Über einen Fall von freier Transplantation eines Knochens von einem Menschen zum andern (Homoplastik) als Ersatz der unteren Oberschenkelhälfte). *Hosp.-Tid.*, Kjøbenhavn., 1913, lvi, 845.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Rovsing removed the internal condyle of the femur for sarcoma, and failed in an attempt to replace it by implantation of a piece of dead bone. Eleven weeks later he did a homoplastic operation, the corresponding portion of the femur of a recently amputated thigh being used to repair the defect. The operation was successful, the new bone implanted twenty minutes after the amputation forming a perfect union. The patient, a year after operation, shows no recurrence, and is able to attend to his regular work.

PERMIN.

Seidel: Operation for Habitual Luxation of the Shoulder-Joint (Über die Operation der habituellen Schulterluxation). *Zentralbl. f. Chir.*, 1913, xl, 1344.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

As ordinary capsular replacement is not always effective, Clairmont and Ehrlich tried fixation of the capsule by means of a muscle and fascia flap from the deltoid brought over the capsule; and as, even after this procedure, there were recurrences, Seidel tried free fascia transplantation—Ollier's incision. His method consisted in the separation of the subscapularis muscle a few centimeters in front of its attachment to the lesser tuberosity; resection of an oval piece of capsule; suture; free transplantation of a flap of fascia from the sheath of the rectus covering the entire joint; intertwining of the lateral end of the fascia with the deltoid; and suture of the subscapularis muscle. In this way tension of the capsule is caused by raising the arm. A post-mortem preparation from an epileptic case showed, microscopically, the complete preservation of the transplanted flap.

MAYERSBACH.

Lorenz, A.: Bloodless Operation for Pseudarthrosis of the Neck of the Femur (Über die unblutig operative Behandlung der Pseudarthrosis colli femoris). *Ztschr. f. orthop. Chir.*, 1913, xxxii, 499.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Lorenz describes the different operations, and is opposed to any radical operative procedure, par-

ticularly Borchardt's. He considers only median fractures just below the head. Peripheral and intertrochanteric fractures almost always result in bony union. The nearer the median line the fracture is, the less chance there is of bony union, because exact apposition cannot be obtained. We cannot judge of the time taken for recovery by that of a fracture of the diaphysis, and no attempt should be made to bear the weight of the body for from six to eight weeks. Too much demand should not be made on the neck of the femur. This is avoided by fixing the leg in extreme abduction and complete extension, with the greatest possible degree of inward rotation. The leg should not be used for a year after the accident. Lorenz says imperfect coaptation of the fragments is the chief cause of pseudarthrosis, but that even if bony union cannot always be attained, the functional capacity can at least be improved and the pain lessened.

The poor function of the diseased leg is due to: (1) Insufficient capacity of the neck of the femur to bear weight; (2) atrophy; and (3) contracture. Flexion and adduction are important agents in producing these conditions. Borchardt does not believe in extra-articular osteotomy in fractures of the neck which are likely to heal in a poor position; but Lorenz prefers it, because it is not dangerous and because the real cause of the functional trouble does not lie in the badly healed fracture itself but in the changed position of the femur. Lorenz claims that clinical examination gives a much more reliable diagnosis than röntgen-ray photographs, and gives a detailed account of the diagnostic signs.

Treatment of pseudarthrosis has two objects, i.e., bony union, which cannot always be attained, and overcorrection of the typical malposition caused by contracture, which can always be attained. The author describes four cases. SCHLENDER.

ORTHOPEDICS IN GENERAL

Bamberg, K., and Hulschinsky, K.: Congenital Fragility of the Bones (Über angeborene Knochenbrüchigkeit). *Jahrb. f. Kinderh.*, 1913, lxxviii, 214. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

From their own experience and literary research the authors have come to the following conclusions: Osteogenesis imperfecta (Vrolik) and osteopsathyrosis idiopathica (Lobstein) show the same clinical picture, the most important symptom of which, namely brittleness of the bones, is caused by an intra-uterine predisposition to defective bone formation. Fifty per cent of the cases of osteopsathyrosis are hereditary. The early form, called osteogenesis imperfecta, shows fractures occurring during intra-uterine life or in labor and has a bad prognosis on account of injuries to the lungs caused by multiple fractures of the ribs. Of 31 cases collected from literature only three survived. Most cases were stillborn or premature deliveries in which crepitation of the skeleton and old and recent fractures with usually abundant callus formation were found. The skull

represents a sac which adapts its form to the underlying structures, and the degree of its ossification seems to be closely related to the vitality of the child. Heredity plays no part. Pathological anatomy shows aplasia of the compact tissue and the spongy substance of the diaphysis and epiphysis with normal growth of cartilage, resulting in slender bones with weak compact tissue and almost no spongy substance, which is shown in radiograms. Disturbed function or defective formation of the periosteum may be looked upon as the cause. The simultaneous presence of cellular and fibrous marrow in one of the cases carefully examined microscopically by the authors refutes Recklinghausen's theory of a "myeloplastic malacia."

The folds and kinks of the epiphyseal cartilage, also described by Looser, are partly the outcome of disproportions between the normal breadth of the epiphysis and the decreased diameter of the shaft, and partly caused by fractures of the compact substance. The late form of the disease shows the same pathological anatomical changes as described in the early form, but can be recognized with certainty only by metabolism experiments which show permanent positive calcium balance. The disease of the bones is not caused by loss of calcium but by incomplete rudimentary formation of the bones with irregular distribution of calcium. In the second case reported by the authors, experiments in metabolism showed retention of calcium, which could be increased three or fourfold by the administration of phosphorized cod liver oil. All affections which show permanent negative calcium balance do not belong to the class of so-called congenital fragility of the bones. The prognosis of the late form is better because the fractures occur after birth, and in 105 cases there was no death. The fragility is noticed first either from the ninth month to the second year of age, during the first efforts to stand up, or from the sixth to the fourteenth year of age, during physical exertion. The fractures alone cause shortening and deformities of the bones. In the early form the fractures are exclusively transverse; in the late form there are also oblique fractures. In the first form we see quick healing with copious callus formation, in the late one the healing is often slow and the callus formation poor. Differentiation of the two diseases is not possible either by röntgenologic or histologic examination. SIEVERS.

Erving, W. G.: The Treatment of the Results of Anterior Poliomyelitis. *Va. M. Semi-Month.*, 1913, xviii, 341. By Surg., Gynec. & Obst.

Erving gives a brief history of the disease from the first systematic study of it by Heine in 1840 to the work of Flexner, Lewis, Noguchi, and Rosenau in isolating the causative micro-organism and demonstrating its spread by the stable fly.

In the acute stage the mortality is often as high as 20 per cent, but the resulting paralysis is of the greatest interest. Treatment during the first year consists of electricity applied either to the spine

directly or to the affected muscles, but less is expected of it than formerly. Massage, active and passive hyperæmia, and active, or better, passive muscle exercise are of much greater value. Deformity is to be prevented by splints or plaster, or even tenotomy and manipulation followed by retentive apparatus to prevent stretching of weak muscles.

During the third stage, after all natural improvement has occurred, the resulting deformities must be treated by suitable operations, and then attention must be directed to restoring function by tendon transplantation, silk inserts, osteotomies, or arthrodeses. He believes that tenotomies done early, by preventing undue stretching of weakened muscles, often prevent deformity and make subsequent operations for restoration of function less severe. Flail-joints are best immobilized by arthrodesis after ten years of age, but great care must be taken to avoid injury to epiphyses. Nerve transfer has not been useful except in cases of muscles having the same nerve supply.

Of all methods he believes tendon transfer with proper use of silk extensions and ligaments has proved most satisfactory in well selected cases, while in cases not admitting of operation, well-fitting apparatus and attention to muscle exercise and training will often do much good. C. E. WELLS.

Mills, E. P.: A Case of Tendon Transplantation to Overcome Defect Resulting from Poliomyelitis. *N. Eng. M. Gaz.*, 1913, xlviii, 539.

By Surg., Gynec. & Obst.

To the literature is added a report of a successful tendon transplantation in a child for paralysis of the shoulder due to acute poliomyelitis occurring four years previously.

An incision was made beginning on the neck and extending down over the point of the shoulder to just below the greater tuberosity of the humerus. The skin was well retracted. Search for the deltoid failed to bring to light any fibers of this muscle. The aponeurosis, however, was present. The tendinous attachment of the superior fibers of the trapezius muscle was then severed from the outer third of the posterior border of the clavicle, and the insertion of the middle fibers severed from their attachment to the inner margin of the acromion process and to the adjacent surface of the crest of the spine of the scapula. These attachments were gathered together and were stitched to the lowest possible point on the capsule, with the arm elevated to an angle of 110 degrees. The aponeurosis of the deltoid was then whipped over these fibers and the skin closed.

The result shows that the patient can now lift and hold out her arm to nearly a right angle.

CHARLES M. JACOBS.

Fassett, F. J.: The Operative Treatment of Paralysis in Children. *Northwest Med.*, 1913, v, 287.

By Surg., Gynec. & Obst.

The author notes the predominance of the flaccid spinal type of paralysis following the epidemic of 1908, 1909, and 1910.

In 200 cases under his observation, not less than three years old, thirty-five have been operated upon, the remainder being given mechanical treatment; spontaneous recovery occurred. Indications for operation are to correct deformity, to prevent further deformity and to secure stability. The author emphasizes the importance of sustaining position after operation, and the use of only those muscles which may be spared to advantage in tendon transplantation.

Fassett describes the operation of partial arthrodesis for simple foot-drop. The posterior articular surface of the astragalus being used only in the position of toe-drop, he abolishes this quarter and prevents deformity. The operation divides the heel-cord and raises the posterior ligaments until the base attaches to the tibia. The synovial membrane and cartilages are removed from the posterior quarter of the articular surface of the astragalus and the flap of ligament sewed on to an attachment along the anterior edge of the denuded area. The heel-cord is then sutured, the wound is closed, and casts are applied for a month.

In cerebral plastic cases he prefers plastic tendon lengthening and operates only on those in whom mental capacity warrants it. H. W. MEYERDING.

Lord, J. P.: The Whitman Operation for Talipes Calcaneus Paralyticus. *J. Am. M. Ass.*, 1913, lxi, 1374.

By Surg., Gynec. & Obst.

The author gives in detail the technique of the Whitman operation and summarizes it as follows:

1. The removal of the astragalus.
2. The freeing of the malleoli and the preparation of a new articulation.
3. The transplantation or resuture of the peronei tendons.
4. Backward displacement of the foot.
5. The fixation of the foot in equinus.

It is a radical operation and is indicated in extreme cases of paralytic deformity of the foot for the establishment of stability. Feet on which it is performed do not wobble or roll nor tend to do so. From his experience of twenty cases the author concludes that the operation has a wider range than for calcaneus alone, and should become more popular among surgeons. The frequent failure of tendon transplantations, silk implants, etc., due to weakened and overstretched muscles justifies the adoption of astragalectomy in extreme cases. C. W. CLARK.

SURGERY OF THE SPINAL COLUMN AND CORD

Tscherniak, M.: Acute Suppurative Osteomyelitis of the Spine (Zur Kenntnis der akuten eitrigen Osteomyelitis der Wirbelsäule). *Dissertation*, Königsberg, 1913.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The total number of reported cases is 65. The author reports a case of osteomyelitis of the spine in a 9-year-old girl operated on by Lexer. In the course of the disease paraplegia suddenly developed with total anaesthesia from the lower border of the ribs down. Incision was made from the ninth to the twelfth dorsal spines. To the left of the ninth dorsal vertebra there was a pocket of pus. The spinous processes above this were removed till the upper end of the cavity was reached. The dura was not opened. A drain was placed in the canal between the bony wall and the dura. The wound was tamponed with sterile gauze. The motor paralysis improved markedly, and sensation was fully restored. A metastatic abscess developed in the left knee. Two months later the child died after profuse bleeding from the arms and vagina.

Any part of the spine may be affected, though it is usually the lumbar region. If one vertebra is affected the condition may exist only in one of its processes. In most cases the vertebral arch with its processes is the seat of the disease, while in tuberculosis the body is usually affected. Frequently there is a history of trauma. The point of origin is often hard to find. Angina, furuncle, or whitlow may be the primary infection. Bacteriologically staphylococcus pyogenes aureus is most frequently found. The location of the focus in the spine determines which way the pus will burrow and this may bring about serious complications. Rupture into the spinal canal is the most serious accident on account of the injury to the spinal cord from pressure of the pus or extension of the inflammatory process in the form of a myelitis. Usually the disease begins suddenly with severe symptoms, so that the patient may be semi-conscious from the onset and a diagnosis is difficult for a few days. Later, the pain along the spine directs attention to that region. The prognosis should always be guarded on account of the frequency of metastases. Formerly the mortality was 58 per cent, but now it is 41.5 per cent. In spite of operation, kyphosis, fistula, paralysis, or paresis may develop. Treatment must be operative. Wiesenger's serum treatment had no effect. To prevent kyphosis all methods of treatment for spondylitis should be adopted, extrusion, etc.

VORSCHUTZ.

Calvé, J., and Lelièvre, H.: Radiography of the Vertebral Column in Profile in Pott's Disease. *Am. J. Orth. Surg.*, 1913, xi, 193.

By Surg., Gynec. & Obst.

The authors recommend lateral roentgenograms in Pott's disease of the spine as being of value, firstly,

in determining very early changes; secondly, showing accurately the extent of the lesion; thirdly, indicating the most useful orthopedic procedure to be employed in the treatment, and lastly, ascertaining when a cure has been obtained.

Clearly marked thinning of the intervertebral disc affected is the most constant early finding, and occurs simultaneously with such presumptive clinical evidence as localized contracture and slight difficulty in gait. Destruction of bone and consequent kyphosis occur later, and the degree and extent of involvement can be clearly demonstrated by the profile roentgenologic examination.

This likewise reveals how the deformity is produced, and the data thus obtained are of value in determining the proper treatment for its correction.

Examination of the normal spine during strong flexion or extension indicates an axis, called the neutral point by the authors, which sustains the minimum pressure in all the principal movements of the spine. In Pott's disease the portion in front of this point, and which is the usual seat of origin of the lesion, being subjected to greater pressure, undergoes "compressive ulceration." As a result of this, the body of the vertebra gradually becomes cuneiform in shape and kyphosis results. In treatment the aim should be to take the pressure off at this anterior portion by inducing a lordosis, and thus to prevent deformity. If kyphosis be present when treatment is begun, the induced lordosis exerts a second beneficial result, in that it shifts the greater pressure posterior to the neutral point, and causes a "compressive ulceration" of that portion. This tends to change the shape of the body of the affected vertebrae from cuneiform to rectangular, and bring the spinous processes together, and thus lessen the deformity. A compensatory lordosis immediately above and below the affected part assists correction by causing extension of the intervertebral disc anterior to the neutral point and compression posterior to that point.

The extent of the lesion as shown by the lateral roentgenogram directly affects the prognosis as to the ultimate outcome and also duration of time necessary to effect a cure. No changes pointing to cicatrization are visible before two or three years, and the time necessary for osseous consolidation, which is the last stage of repair, may be considerably longer. Other compensatory changes may likewise be observed by means of the roentgen ray, and serve as a record of the progress made.

ADOLPH HARTUNG.

Turner, W. G.: The Treatment of Tubercular Spondylitis or Pott's Disease. *Canad. M. Ass. J.*, 1913, iii, 852.

By Surg., Gynec. & Obst.

The main subject of this paper is the radical treatment of Pott's disease — considering particularly Albee's operation. In three instances unexpected

tuberculous tissue, with cold abscess formation, was accidentally cut into in the region of the spinous processes, but, this contingency notwithstanding, the grafts were inserted and primary union resulted in each case.

In four cases skiagraphs were taken ten days

to two weeks after operation showing only an imperceptible shadow of the graft.

In three cases flexibility of the spine was apparent four months after operation, and yet improvement, local and general, was marked in all cases.

CHARLES M. JACOBS.

DISEASES AND SURGERY OF THE SKIN, FASCIA, APPENDAGES

Valentin, B.: Experiments on Homoplastic Fascia Transplantation (Experimentelle Untersuchungen zur homoioplastischen Fascientransplantation). *Beitr. z. klin. Chir.*, 1913, lxxxv, 574.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

After briefly reviewing the present status of homoplastic tissue transplantation, Valentin has made a histological study of this process in simple fascial tissue, regarding it as the basis of all progress in this direction. The field of application for free, mostly autoplasic fascia transplantation is to-day already so large that the question of using the same material homoplastically becomes of especial interest. In a series of experiments on dogs, a piece of fascia lata was removed from a dog and either immediately implanted in a gap in the peritoneum of another dog with silk sutures or first placed in a physiological salt solution at body temperature for ten to fifteen minutes, while the site of implantation was being prepared. The abdominal cavity was

used because the nutrition is more rapidly restored and functional stimuli returned more rapidly by partial removal of the abdominal wall (muscle-resection), on account of the necessary resistance against the natural abdominal pressure. In various experiments, conducted at intervals of 4 to 296 days, the fascia had mostly healed without being replaced by scar or connective tissue. In the first few days a marked oedematous swelling of the whole fascia, with leucocytic infiltration, takes place. The characteristic spindle-shape nuclei retain their staining power as the sign of life, and the elastic fibres are also preserved. After 24 days scarcely any difference from normal fascia is to be recognized. The question of relationship in the animal plays no rôle in the healing. The healing process in homotransplantation is more intensive than in autotransplantation, the time element being increased (about 100 days as compared to 26 days).

DRAUDT.

MISCELLANEOUS

CLINICAL ENTITIES — TUMORS, ULCERS, ABSCESSSES, ETC.

Strauch, F. W.: Experimental Transmission of Tumor Cells (Experimentelle Übertragung von Geschwülstzellen). *Berl. klin. Wchnschr.*, 1913, l, 1425.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The researches of Apolant, Henke, and Lewin demonstrated that there was no essential difference between human cancer and that of mice. Strauch was able to transplant tumors from one animal to another, whether of the same or different species. The material with which he began was the carcinoma of a mouse which had passed through 26 animals. The injection of the undiluted cancer-juice was always made in the axillary space. The constituents of the food given the animals seemed to have some influence on the development of the tumor. The best material is obtained from tumors about four weeks old which have developed rapidly but do not show extensive necrosis. The spontaneous tumors in mice occur only in the females and seldom produce metastases. In the transplanted varieties metastases occur readily along the blood stream. The cachectic tendencies manifest themselves in marked blood changes and amyloid degeneration of the abdominal lymph glands.

The transplantation of cancer of mice into rabbit was done as follows: A 25 per cent emulsion of cancer-juice from tumors averaging 6 weeks old was inoculated under the skin of the back, with 50 per cent positive result. Cachexia usually developed a few days after inoculation. Transplants from these tumors were inoculated successfully, in 100 per cent of cases, into other rabbits and these showed very rapid and vigorous development.

The transplantation of these rabbit cancers back into mice was never successful. The morphology of the tumors from these two animals was quite different, but those from the same species were alike. In 13 cases experimented on metastases were found in only 1, and that a small nodule in the flexure of the groin. A local recurrence appeared in the same area. On two occasions suspicious nodules were seen in the liver. The vaccination tumors are hard to classify histologically.

KREUTER.

Carr, W. P.: A Study of the Cancer Situation.

Surg., Gynec. & Obst., 1913, xvii, 490.

By Surg., Gynec. & Obst.

Carr reviews the known facts bearing upon the pathology and etiology of cancer. He finds that carcinoma is essentially a wild growth of epithelial

cells, and that, while in some instances these cells may be embryonic inclusions, they are in most cases probably normal epithelium that has undergone a sudden change. In either case the cells which have been lying dormant or acting in a normal manner for years, suddenly begin to grow wild.

When we are able to state definitely the cause of the wild proliferation we shall have solved the problem. In the light of our present knowledge but three explanations seem possible: (1) Lack of nerve control that normally regulates the activities of every living epithelial cell; (2) intoxications of the cells, either by germ infection or by absorption of poisons from the alimentary canal; (3) altered food supply to the cells. After carefully considering these possible causes, he concludes that most carcinomata are due primarily to alteration or destruction of the normal influence from the central nervous system on the epithelial cells of the body; and that the exciting cause is local injury or prolonged irritation. He thinks the exhaustion of the central nerve cells an important predisposing cause, whether the exciting cause be simple trauma or infection with a cancer germ, and that if this predisposing cause could be prevented few cases of carcinoma would occur either from prolonged irritation or from germ inoculation.

He recognizes a precancerous condition, the result of civilized modes of living, in which there is exhaustion of the granular matter of the brain cells, shriveling of the nuclei, and complete destruction of some cells, occurring while the somatic nutrition is still good and the epithelial cells active, i.e., a premature aging of the central nervous system while the epithelial cells are comparatively young. This explains the immunity of savages to cancer and its increasing prevalence among the civilized, particularly in middle life. He believes this precancerous state is caused by nervous worry and auto-intoxication, and that it can be recognized and prevented, if patients can be made to live as they should. This is the best hope for checking the increase of cancer.

DeKeating-Hart: Researches on the Pathogenesis of Cancer. *Practitioner*, Lond., 1913, xci, 445.
By Surg., Gynec. & Obst.

The author gives an outline of the most important theories of the cause of cancer and goes into a rather full discussion of each theory, pro and con.

The parasitic theory has been advanced by several authors, but has few supporters. No microbe has positively produced any neoplasms in controlled and repeated experiments. Since material proof is wanting as to the exact cause of cancer, analogy, on the general principles of natural laws, must serve to support any pathogenic hypothesis of cancer. The essential differences between infections and cancer are the following: (1) Cancer requires the complete cell for transplantation while microbic infection requires only the specific germ; (2) cancerous cells live on actively while infected cells have slight grafting powers.

The cellular theory is supported by many known facts of cellular animal life. Both normal and cancerous tissue can be grafted on an organ other than that wherein they were developed. Grafts of both grow better in closely related individuals, and are absorbed in an organism belonging to a different species from that from which they were taken. Both tissues can be grafted most easily in the very young and in healthy and robust individuals.

The irritative theory seems to explain many of the facts observed in the study of cancer. Menetrier showed that chronic gastritis can develop into adenomatous tissue and this further into carcinoma. At no stage is it possible to state that the cancer begins, but it is a gradual transition. According to his theory, cells which can resist the lowered physiological conditions in which they have vegetated are nothing else but cancer. Irritation is the first stage of inflammation and is accompanied by heat and vaso-dilatation. It has been shown experimentally that irritation increases the assimilation, absorption, and karyokinesis of the irritated cells. This theory doubtless explains many of the phenomena of cancer and is the one strongly supported by the author.

J. H. SKILES.

Levin, I.: The Mechanism of Metastasis Formation in Experimental Cancer. *J. Exp. Med.*, 1913, xviii, 397.
By Surg., Gynec. & Obst.

In this investigation Levin undertook to study the influence of the host upon the development of metastatic tumors. Two inoculable tumors (a spindle-celled sarcoma and an adenosarcoma) of white rats were used. Levin concludes that the main factors in determining the frequency and localization of metastases are the character and malignancy of the tumor cell on one hand and the general and local susceptibility of the organism of the host on the other. These differences are not due to the ease of detachment of the cells of the primary tumor. The experiments also show that after radical removal of a cancer without local recurrence, inoculation of the same tumor into the original host will always be unsuccessful. The reverse is also true. This shows that when the organism possesses a certain amount of resistance it is able to neutralize the few cancer cells which must be left behind after the most radical operation and for the same reason metastases or secondary inoculations will fail to grow.

JAMES F. CHURCHILL.

Hugo, E. W.: Trauma and Sarcoma (Trauma und Sarkom). *Ztschr. f. Hygiene, gericht. u. prakt. Med.*, 1913, xlix, 716.
By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Hugo reports the occurrence of a tumor along the line of fracture of the upper arm, which he believes developed as the result of traumatism. The tumor was diagnosed by X-rays, six weeks after the fracture occurred, and disarticulation of the arm was done. The case fulfills all the conditions laid down by Coley and Theim to establish an etiological rela-

tionship between trauma and the appearance of the tumor. Coley's requirements are that the tumor appear as a primary growth a comparatively short time after the injury and at the site where trauma was inflicted. It must also be known that the organ or member was healthy before the accident. Theim lays down the same conditions, and adds that if there exists a new growth at the time of injury, the development of which is hastened by the accident, the increase in size is about four times as rapid as in ordinary cases.

KOENIG.

Roussy, G.: Cholesteatomas (Les cholestéatomes). *Bull. l'Ass. fran. p. l'étude du Cancer*, 1912, v, 192.

By Journal de Chirurgie.

After a very minute study of 23 of his own cases of cholesteatoma in man and animals, the author shows that the term cholesteatoma at present includes widely different kinds of tumors as to location, objective characteristics, and histological structure. The only characteristic they have in common is the presence of cholesterol crystals in their interior.

The deposition of this material in the tissues in crystalline or liquid form represents an infiltration of fatty substance (cholesterin infiltration), which may be observed in inflammatory new formations as well as in true tumors. Certain effects of local deposition of cholesterol are well known, such as xanthelasma, arcus senilis, and atheroma. It must be admitted, therefore, that cholesterol infiltration, whether primary or secondary to microbic infection, may contribute to the formation of neoplasms because of the morbid reactions it gives rise to in the tissues.

The name of cholesteatoma is given to these neoplasms. So cholesteatomas caused by local deposits of cholesterol have the same relation to cholesteræmia as tophi have to uric acid intoxication. We cannot properly divide them into false and true cholesteatomas, the first being represented by degenerated inflammatory masses (those of the ear, for example) and the second by endotheliomas which have undergone cholesterol degeneration, such as those of the meninges.

The cholesteatomas of the choroid plexus of the horse do not belong, as is generally thought, to tumors of the endothelium type, but rather to the class of false inflammatory tumors characterized by cholesterol infiltration.

As to the cholesteatomas of the meninges of man, it is probable that they are tumors of variable nature and origin, frequently with secondary changes and almost always with cystic transformation—tumors of the epithelium of the ependyma; epithelial tumors from foetal inclusion, a sort of epidermoid cyst of the brain; and perhaps also endotheliomas. The same thing is true of a series of other tumors, such as glandular epitheliomas, particularly those of the sexual glands, which often, especially in their embryonic form, show regions rich in deposits of cholesterol.

In short, there is no group of tumors with clearly enough defined anatomical and histological characteristics to deserve classification together under the name of cholesteatomas. The term should not, therefore, be used except in a purely morphological sense.

JEAN CLUNET.

Benedek, L.: Paraffinoma; with Report of a Case (Die Paraffinoma). *Pest. med.-chir. Presse*, 1913, xlix, 221. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Paraffin tumors may arise from its injection in warm, liquefied form as well as from the application of the hard cold substance. On account of the irritation of this foreign body on the neighboring tissues a productive inflammatory reaction takes place. Paraffinomata are seldom seen, as they arise a long time after the injection and cause very little discomfort. The actual cause of their occurrence is still a matter of doubt. The amount of pressure exerted during this injection and the size of the mass injected may have some bearing on their development.

The author reports a case that came under treatment for a paranoïa. There was a paraffin tumor in each breast. The skin over the upper half of each breast was spotted bluish red for an area the size of the palm of the hand, and was firmly attached to a hard oval tumor about 2 cm. thick. From the upper part of each tumor arose eight to ten irregular nodules varying in size from that of a pea to that of a hazel-nut. An even larger number of nodules could be felt in the infra- and supraclavicular fossæ, some of which were arranged like a string of beads, the axillary spaces being free, however. On account of the mental derangement the etiology was disputed, and two of the nodules were removed to confirm the diagnosis by microscopic examination. The section showed paraffin nests 40 to 50 ccm. in diameter, surrounded by well-defined laminated connective-tissue capsules, which here and there sent partitions toward the center of the little nodules and divided them into compartments. In the interstitial tissue there was marked round-cell infiltration, mostly of lymphocytes. There was also a large number of giant cells in a network of young connective-tissue fibres. There were very few blood-vessels.

WORTMANN.

Hertzler, A. E.: Pathogenesis of Congenital Cystic Disease of the Parenchymatous Organs. *Surg., Gynec. & Obst.*, 1913, xvii, 480.

By Surg., Gynec. & Obst.

Polycystic disease occurs in various organs, kidney, liver, pancreas, spleen, cerebral appendages, genito-urinary tract, etc., but has been adequately studied only in the kidney. The cysts in this organ have been considered by most writers to be due to the retention of fluid in the uriniferous tubules, the precise cause of retention being explained in two general ways: (1) Active pathological processes; (2) failure of union of the two parts in which the tubules are assumed to develop.

Hertzler rejects the retention hypothesis for the following reasons. The cystic contents are not urinous, but are similar to the contents of similar cysts elsewhere. The cysts are at no time tubular. In many cases the kidney substance in which the cysts lie is quite normal, thus ruling out occlusion by albuminous material, concretions, interstitial inflammations, etc. Objections to the assumption of embryonal error are: (1) The genesis of the tubules in two parts is not beyond question; (2) there is no evidence of a failure of union between segments; (3) the cysts are not confined to the cortical zone; (4) there is no evidence that the contents are the result of secretion by renal epithelium.

This negative evidence, together with the facts that papillary growth of the lining cells is frequent, and that the disease is progressive in character, leads to the assumption that the disease is a neoplastic one.

Microscopically, the cysts may be surrounded by normal kidney tissue, particularly in infants, or by a zone of fibrous tissue, especially in adults dead of uræmia; or they may be so numerous as to be surrounded only by a minimum amount of interstitial material. In the surrounding fibrous tissue are clefts lined by endothelium. The cyst wall itself consists of a layer of fibrous tissue lined by cells which vary in shape from flat to cuboid, but are always shorter in the vertical than in the transverse diameter. Masses of lymphocytes often occur about the cysts, suggesting miniature lymph-nodes. The contents are colloidal, with a fibrillar network containing a few cells.

Polycystic disease in other organs corresponds entirely to that in the kidney, both in structure and contents, the latter in no case containing material peculiar to the respective organs. That the disease has a congenital basis may be inferred (1) from its early and often bilateral occurrence, (2) from its frequent association with other developmental errors, (3) from its tendency to appear in other members of the same family or in successive generations. One may assume, therefore, that polycystic disease is neoplastic, has a congenital basis and affects tissue which is common to all the localities mentioned.

Polycystic disease is similar both in structure and cystic contents to certain other conditions which are undoubtedly lymphatic in origin; namely, cystic disease of the spleen and suprarenals, pararenal cysts, progressive cystic disease of tendon sheaths, cystic lymphangioma of the tongue and skin. In those which are available for study, growth takes place by the formation of clefts lined with epithelium in the periphery, which later become cystic. These clefts are identical in appearance with those found in the connective tissue surrounding the cysts in polycystic disease. It seems probable, therefore, and clinical experience bears it out, that the progress of polycystic disease, for instance in the kidney, is similar to that which can be observed in cystic lymphangioma of the tongue. Realizing that some of the premises are still under discussion, the author offers the following tentative propositions:

(1). Polycystic disease is identical in all the parenchymatous organs. (2) It resembles closely cystic formations which are known to be derived from lymphatic channels. (3) Polycystic disease probably develops from the lymph channels of the organs affected.

Borst, M.: The Importance of Zoölogical and Individual Relationship in the Transplantation of Normal Tissues (Die Verpflanzung normaler Gewebe in ihrer Beziehung zur zoologischen und individuellen Verwandtschaft). *Tr. Internat. Cong. Med.*, Lond., 1913, Aug. By Surg., Gynec. & Obst.

The transplantation of normal tissues and organs in the same individual (autoplastic transplantation) is always to be preferred to that between different individuals of the same species (isoplastic transplantation), and the latter is superior to transplantation between members of different species (heteroplastic transplantation). The result of any transplantation depends primarily on the different developmental stages of the graft and of the host. Isoplastic and heteroplastic transplantation especially give better results in embryonic than in mature tissue and are available within wider limits in plants and lower animals than in man. The natural relationship of species is shown clearly in heteroplastic transplantation—in the higher animals it is unsuccessful. Biochemic differences, not only between individuals of different species, but between those of the same species, and even those of the same variety, offer obstacles to the success of isoplastic transplantation in the higher animals. These differences decrease with an increase in the degree of relationship within the species, therefore isoplastic transplantations between blood relatives have the best chance of success. The establishment of the fact of individuality in a biochemical sense is one of the most important results of the experiments with the different methods of transplantation. Complete harmony in nutrition and function is found only in the tissues of one individual.

A. Goss.

Von Fürth, O.: Problems of Physiological and Pathological Chemistry (Probleme der physiologischen und pathologischen Chemie. Fünfzig Vorlesungen über neuere Ergebnisse und Richtungslinien der Forschung. Bd. 1. Gewebeschemie). Leipzig: Vogel, 1912.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

In a surgical abstract only those matters bearing on surgical questions will be considered. In regard to albuminous putrefaction, auto-intoxication still is not explained. That there is an accumulation of toxic putrefactive products in the intestine during ileus is certain, but it has not been proven that an absorption of these products from the intestine takes place. Whether bile inhibits putrefaction also is questionable. The antiseptic action of the bile, however, has been disproven by the fact that micro-organisms thrive as well on bile media as on others. Important advances have been made in the colloid chemistry of muscle physiology. During muscular

activity the formation of acid within the muscle fibers produces changes in the osmotic relations and in the distribution of the water. This same change in the osmotic relation of the muscle is also held to be the cause of rigor mortis, since the disappearance of the rigor can be explained by the reversing of the same process. Severe muscular exertion and convulsions produce an early rigor, as each muscular contraction increases the quantity of lactic acid.

In the chemistry of nerve substance the lipoids have assumed especial significance. Cholin, a substance found in the brain, is physiologically and surgically interesting. The action of many fresh organic extracts in decreasing blood pressure depends on its presence, especially thyroid extract and bowel extract in intravenous injections. In small doses it produces decrease in the coagulability of the blood and severe peristalsis of the bowel. Zuelzer's "peristaltic hormone" probably exerts its action through the cholin present.

The problem of blood coagulability has many interesting points unsolved. Whether the decreased coagulability of the blood in hepatic disease and after chloroform narcosis is due to a decrease in fibrinogen or due to substances inhibiting coagulation — antithrombin — remains unexplained. The increase in coagulability following severe loss of blood is due to the hydræmia in which much thrombokinase is washed into the blood-vessels from the surrounding tissues. Compression of the circulation of an extremity acts as a leucostyptic as a result of accumulation of thrombokinase incident to the venous congestion. Infusion of salt solution probably increases the blood coagulability by washing out the thrombokinase from the tissues into the vessels. The best method is the administration of a number of cubic centimeters of a hypertonic solution. Intravenous injection of a starch paste is an excellent hæmostatic and deserves trying out on man.

Instead of stimulating the production of thrombokinase, it may be directly replaced by tamponing the site of hæmorrhage with "thrombokinase" powder or with extracts of spleen, thymus, liver, or with serum, or by the direct intravenous administration of normal human or animal serum. The action of calcium salts in promoting blood coagulability is also well known. The mechanism of the action of gelatin is unknown and disputed. The pathogenesis of hæmophilia seems to be dependent on an anomaly of the thrombokinase production by the vessel walls. Interesting biochemic experiments in regard to inhibition of transudates and exudates by means of calcium salts may be of value in treatments. As the exit of the fluid from the blood into the tissues — producing urticaria, pleural effusions, or inflammatory exudates — is dependent on the coagulability of the blood, the formation of these exudates and transudates may be inhibited by the administration of calcium salts. The local application of lime water in burns is therefore based upon sound principles. The pathogenesis of rachitis consists in the fact that the osteogenetic tissue, in spite of the presence

of sufficient calcium salts, has become incapable of assimilation and deposition of the calcium. Rachitis and osteomalacia cannot be separated, though the pathogenesis of the latter is unknown.

Beri-beri is probably due to a disturbance of the phosphorous metabolism of the liver incident to feeding on "white rice." Very little is known in regard to the secretory function of the liver. Carbohydrates stimulate the secretion of bile the least, while meat stimulates it the most of all the food-stuffs. Introduction of acids into the bowel or the administration of biliary acid salts stimulates the secretion of bile intensely. Cholæmia is due probably to a disturbance of the liver function, an incomplete breaking down of the albuminous products, rather than to a flooding of the organism with biliary substances.

Stasis and infection are the principal causes of gall-stone formation. Cholesterin salts are formed if the cholesterin solvent — the biliary acid salts — are destroyed by bacterial processes or through autolytic processes in sterile bile.

The biochemic investigations of the reproductive organs has resulted in some interesting discoveries. Early castration in man produces a persistence of the infantile type, delayed calcification of the epiphyses, persistent thymus, small thyroid, and enlargement of the hypophysis. Autoplastic transplantation of the testicle has been successfully performed on rats. The internal secretion of the testicle is not elaborated by the radio-sensitive parenchymatous cells but by the interstitial "Leydig" cells. The vitality of the spermatozoa is decreased by physiologic salt solution, and increased by alkalies, prostatic secretion, spermatic fluid, and blood serum. In women early castration causes a reversion to the heterosexual type. Implantation of ovaries from another species has been successfully performed in guinea pigs, rabbits, and in the human being. The internal secretion of the ovary is likewise elaborated by the stroma cells of the follicles and of the corpus luteum. Secretions of the male and female are not opposite in action, as is seen from the parabiosis of mice of different sexes.

The kidney function is to-day divided into three distinct parts: filtration by the glomeruli, secretion by the secretory tubules, and reabsorption by the cortex. The newer methods of making functional tests of the kidney are practical only in regard to determining the specific gravity, total nitrogen excretion, sodium chloride excretion, and the excretion of foreign substances introduced. Carrel and Guthrie have successfully transplanted kidneys.

In the last two chapters the author discusses neoplasms. The histologic and genetic separation of both of the principal groups cannot be adhered to any more. Mice carcinomata can be converted into sarcomata. The curative action of radium may be explained by the disintegration of cancer cells, the destruction of cell ferments and by the activation of autolytic ferments. The antifermant reaction is no specific for cancer. Normal serum dissolves cancer

cells, a peculiarity not invested in the serum of cancer patients. This serum reaction is only an aid to the clinical diagnosis. The ability to grow normal and pathological tissue is of tremendous significance for the study of the cancer problem. The immunization against malignant tumors with curative serum and "epitheliotoxins" has led to no practical results. Vaccination with non-virulent virus of hæmorrhagic mice tumors, as well as the immunization with normal tissue parts, are accomplishments of very recent date and offer splendid prospects. The work may be recommended to every surgeon for practical orientation.

KLOSE.

SERA, VACCINES, AND FERMENTS

Von Ruck, K.: Relative Value of Living and Dead Tubercle Bacilli; and Solutions of Their Endotoxins in Active Immunization Against Tuberculosis (Über den relativen Wert lebender und toter Tuberkelbacillen und deren Endotoxine in Lösung bei aktiver Immunisierung gegen Tuberkulose). *Beitr. z. Klin. d. Tuberk.*, Würzb., 1913, xxvii, 353. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author gives his own experience in immunization begun in 1896, and discusses Friedmann's publication, which claims to have obtained cures in even progressive cases of tuberculosis by immunization with living tubercle bacilli from cold-blooded animals. Von Ruck, 1896, used an aqueous solution of tubercle bacilli with the fatty constituents removed, after grinding and several months' maceration. After several years of comparative experiments with different tuberculins on partial antigens, and after further experiments on animals in the light of modern serologic achievements, he has returned to the old aqueous extract, since it contains all the constituents of the tubercle bacilli, including their nucleo-proteins and fat content free in the solution. A single dose brings about in the short time of four to five days the appearance of all partial amoceptors in sufficient quantity to give the serum of the patient complete lytic power and to destroy the virulence of the tubercle bacilli. Since this vaccine is effective, it is not necessary to use an antigen of living tubercle bacilli, as he shows from the literature, this is not without danger.

He then discusses the theoretic principles of methods of immunization with living non-virulent bacilli or their endotoxins in their relation to the practical specific prophylaxis of tuberculosis. He has given more than 700 injections of his vaccine to children and adults, most of whom had been shown by previous examination to be tubercular. Clinical examination of them afterward, in connection with experiments on animals, have shown that this method yields all that can reasonably be expected of immunization. In regard to the curing of progressive cases of tuberculosis, in spite of Friedmann's claims, he takes a decided stand against optimistic hopes regarding the use of endotoxins of bacilli or non-virulent bacilli, even of cold-blooded animals, as a means of treatment.

STAMMLER.

Brandweiner and Hoch, O.: Gonorrhœal Vaccines (Mitteilung über Gonorrhœe). *Wien. klin. Wchnschr.*, 1913, xxvi, 1304.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Autogenous gonococcus vaccines produce a stronger local reaction than either monovalent or polyvalent virus from other sources. Allogenuous polyvalent vaccines produce more marked reactions than the monovalent, and in this respect sometimes resemble the autogenous vaccines very closely. The assumption that there are differences in the strains of gonococci is thus confirmed. Polyvalent vaccines of different sources but from the same manufacturers give about the same local reaction with equal dosage.

BLANCK.

Von Dungern and Halpern: Complement-Fixation Reaction with Cerebrospinal Fluid in Carcinoma (Über Komplementbindungsreaction mit Liquor cerebrospinalis bei Carcinom). *München. med. Wchnschr.*, 1913, lx, 1923.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The authors used acetone extract of the red blood cells of a paralytic without the addition of sodium hydroxide as an antigen, and also a heart extract. The fluid, which was free from blood, was used in doses of from 0.4 to 0.5 cc. Five cases of carcinoma showed positive reaction in the cerebrospinal fluid, though there was no disease of the central nervous system. Syphilis was the only other condition that showed a positive reaction. The fluid of syphilitics, however, reacted at the same time with heart extract, and the pure carcinoma cases did not. In carcinoma the possibility of a general infection must be considered.

KREUTER.

BLOOD

Stewart: Studies on the Circulation in Man. VII. The Blood Flow in the Feet. *J. Exp. Med.*, 1913, xviii, 354.

By Surg., Gynec. & Obst.

Stewart found that the blood flow in the feet is smaller per unit of volume of the part than in the hand, the ratio of foot flow to hand flow per 100 ccm. of the part usually ranging in normal persons between 1 to 3 and 1 to 2. In the supine position, with the legs hanging down, the flow in the feet seems to be somewhat greater than in the sitting position.

JAMES F. CHURCHILL.

Stewart: Studies on the Circulation in Man. VIII. The Blood Flow in the Feet, with Special Reference to Fever. *J. Exp. Med.*, 1913, xviii, 372.

By Surg., Gynec. & Obst.

In the cases of fever investigated, the flow in the feet never exceeded the normal flow and was usually much below the normal. It is suggested, in explanation, that in fever cases the vasoconstrictor mechanism of the peripheral parts, especially of the skin, is abnormally excited and some evidence that this is the case is presented. The significance of this increased cutaneous vasoconstriction is assumed to be that it is a compensatory arrangement which secures

an increased flow of blood for the organs mainly suffering from the infective process. Accordingly, the rational treatment of pyrexia, if it is considered necessary to treat it, is to abstract heat by a process which will not diminish but even increase the cutaneous vasoconstriction. This condition is fulfilled by the cold bath. Antipyretic drugs which act by cutaneous vasodilatation would seem, for the same reason, to be contra-indicated.

JAMES F. CHURCHILL.

Cooley, T. B.: The Treatment of Hæmorrhagic Disorders. *J. Am. M. Ass.*, 1913, lxi, 1277.

By Surg., Gynec. & Obst.

Cooley reviewed the many theories as to the underlying etiology in the so-called hæmorrhagic disorders. He believes, in view of the large volume of work along this line, that temporary or permanent absence of some one of the clot elements is the usual cause of the persistence of hæmorrhage in these conditions, and that different elements fail in different conditions, if not in different cases of the same condition.

He reaches the following conclusions:

1. Blood therapy of some kind is the best remedy we have for hæmorrhagic conditions.

2. In hæmophilia blood-serum seems to have a specific action so far as checking the hæmorrhage is concerned. It may be used as a prophylactic measure, as well as to stop existing hæmorrhage. Fresh human serum probably is to be preferred.

3. In purpura, melæna and other toxic conditions, in which various blood elements have been shown to be lacking, none of the serums is always effective, and there are good theoretical and clinical reasons for believing that whole blood should be preferred, not only to stop the hæmorrhage, but for a possible curative effect on the underlying disease condition.

4. Transfusion is not really a difficult procedure. It is deserving of extended trial, not as a last resort but as the first treatment in any of the hæmorrhagic diseases of toxic nature.

R. W. MCNEALY.

Noland, L., and Watson, F. C.: Embolism and Thrombosis of the Superior Mesenteric Artery. *Ann. Surg.*, Phila., 1913, lviii, 459.

By Surg., Gynec. & Obst.

The authors report a case of irreducible inguinal hernia, which upon opening showed gangrene of eight feet of ileum. There was no strangulation at either ring. The gut was resected and a Murphy button anastomosis performed. The patient died four days later. At autopsy, it was found that union had not begun at the site of anastomosis.

On opening the heart, a vegetative thrombus the size of a ten-cent piece was found situated just above the aortic valve.

Arteriosclerosis and endocarditis are cited as the most common causes of embolism and thrombosis. There is no characteristic symptom-complex. The diagnosis is rarely made before operation.

The condition must be differentiated from intesti-

nal obstruction, perforations of gastric and duodenal ulcers, acute cholecystitis, appendicitis associated with acute peritonitis, angina sclerotica abdominalis, acute pancreatitis, lead or renal colic, etc., etc. It simulates intussusception.

Intussusception occurs in children in 56 per cent of the cases, while embolism and thrombosis occur after middle life, in cases presenting cardiac and vascular changes. The disease occurs in one of two ways: It simulates (a) intestinal obstruction with or without general peritonitis; (b) intestinal hæmorrhage.

The authors quote Gerhardt, who says: "A typical case should present the following symptoms: A source for the embolus; profuse intestinal hæmorrhage unaccounted for by a lesion of the intestinal wall, or obstruction of the portal circulation, characteristic paroxysmal pain, ileus, and the presence of fluid in the abdomen, rapid fall in temperature, and a large palpable mass between the layers of the mesentery."

The mortality in 47 reported operated cases (Jackson, Porter, and Quinby) is 92 per cent.

According to Merkel over 150 cases have been reported, fatal in nearly every instance.

LUCIAN H. LANDRY.

POISONS

Mayo, C. H.: Local Foci of Infection Causing General Systemic Disturbances. *Med. Herald*, 1913, xxxii, 370.

By Surg., Gynec. & Obst.

Our real knowledge of the specific organisms which cause the great majority of diseases covers a period of but few decades. The fact that there were such was assumed long ago, as evidenced by preventive medicine in vaccination against smallpox.

There are three methods of bacterial invasion: First, by continuity of tissues, as in the eye, ear, and sinuses; second, by ingestion; and third, by direct entrance into tissues and lymphatic channels. Looked at from every point of view, the mouth may be said to be the greatest portal of entry for pyogenic organisms. Pyorrhœa is responsible for the entrance of many infections in youth, and as age advances it becomes a most serious menace. Some degree of bacteræmia probably exists in all infectious diseases, the blood being the principal focus of infection, with local manifestations in various organs, mucosa, or skin.

Protozoa or intestinal parasites play their part in the exhaustion of the vital forces by the development of toxins which are the cause of many chronic diseases.

The total number of instances in which infection takes place by way of the skin is small as compared to that of the alimentary canal.

There probably is no area of equal size which is a greater menace to the health of children than the tonsil, an open lymphatic gland in the mouth, the drainage of which passes through lymphatic channels into the venous system.

Southard, E. E., and Canavan, M. M.: Bacterial Invasion of Blood and Cerebrospinal Fluid by Way of Lymph-Nodes; Findings in Lymph-Nodes Draining the Pelvis. *J. Am. M. Ass.*, 1913, lxi, 1526. By Surg., Gynec. & Obst.

This is the fourth paper in a series on the same general subject. The present paper is an endeavor to throw light on the curious fact observed by Gay and Southard that, whereas 41 per cent of the bloods remain sterile with the methods used, only 28 per cent of the cerebrospinal fluids remain sterile. This work has nothing to do with the controversy between the "intravitalists" and the "post-mortalist" as to the meaning of the bacteria grown from the cadaver. The authors are led to the conclusion that bacteria from whatever source might enter the blood, infect the meninges, die out in the blood and persist in the cerebrospinal fluid. It is also conceivable that organisms may in some way enter the cerebrospinal sheath from lymph-vessels without passing through the blood. The solution of this problem is not undertaken in this work. The results are tabulated in four tables which show the source and the bacteria found. Nine cases are briefly reported.

The authors reach the following conclusions:

1. This continuation of their former work shows that the cerebrospinal fluid (72 per cent) still leads the heart's blood (68 per cent) in percentage of positive cultures (routine, aerobic methods, post-mortem material).

2. Pelvic lymph-nodes led both blood and cerebrospinal fluid (75 per cent).

3. This possibly is due to the great percentage of pelvic lesions in the present series (20 out of 25 cases; 15 of the 20 showing organisms in the pelvic lymph-nodes).

4. It is still uncertain whether these findings indicate ante-mortem or post-mortem invasions. Of course an acute or chronic lesion may conceivably help the penetration of organisms from without.

5. If, as seems likely, the invasions are intravital or agonal, then it would appear that the pelvic lymph-nodes are accustomed to harboring many bacteria.

6. Whether this habit of receiving more organisms than other nodes induces any superiority on the part of these nodes in respect to their power of digestion, they cannot say. If so, a rationale for Fowler's drainage position might be imagined. Such a rationale would be superior to saying that the pelvic peritoneum is a better filter than others or is differently constructed from peritoneum elsewhere.

7. The pelvis, often subject to acute and chronic disease in the insane, appears to supply its lymph-nodes with very numerous bacteria. Some of these are saprophytes, some doubtless pathogens. They are often found in the cerebrospinal fluid post-mortem, even when absent in the blood (destroyed?). The pelvis compares, under the random conditions studied, with the intestinal tract in its habit of supplying bacteria to regionary lymph-nodes. Perhaps

the pelvis surpasses the intestinal tract, since the latter's lymph-nodes happened to be studied during an epidemic of intestinal disease which provided an excess of secondary invaders.

8. The hypothesis of a route of meningeal invasion by way of the blood receives added support from this work, although the possibility of more direct invasion must be considered.

EDWARD L. CORNELL.

ELECTROLOGY

Glendening, L.: The Use of the X-Ray in the Diagnosis of Diseases of the Chest and Abdomen. *N. Y. M. J.*, 1913, xcvi, 664.

By Surg., Gynec. & Obst.

The author discusses the subject from the clinical viewpoint. His observations, made with the help and guidance of Skinner, were chiefly with the fluoroscope. The fluoroscope has the advantage over the plate in that it permits examinations within a short time; a portion of the field can be minutely examined with the closed shutter, and movements can be observed. Aside from actual diagnosis the X-ray may teach the clinician certain phases of physiology and pathology, such as the wave of the heart beat, the action of the auricles, the pulse of the aorta, the movements of the diaphragm, the position of the fluid in pleural effusion, the action of the remains of the contracted lung in pneumothorax, the emptying of the bronchiectatic cavity on coughing, the act of swallowing, the peristalsis of the stomach, the method the stomach employs of emptying its contents into the duodenum, the physiology of vomiting, the normal anatomy of the large intestine, and the action of enemas. To a physical examination of the heart the X-ray can add little of real value in a given case. In the use of the X-ray in examination for pulmonary tuberculosis he distinguishes between early, middle, and late cases.

In middle and late cases, where the clinical diagnosis is usually already quite satisfactory, the X-ray gives the most data. However, even in the early cases with only slight infiltration limited to the apex or a small part of one lobe, the fluoroscope may be of value. Though no distinct shadow be seen, when the patient takes a deep breath the apices do not light up as in health, the diaphragm on the affected side does not move through so wide a space, and the tuberculosis heart may be present; that is to say, the small heart hanging vertically in the chest and close to the midline. The X-ray should always be used in obscure cases, for one single sign may throw the balance, and it is always possible that the radiological examination may furnish that last straw. Its negative evidence, too, is comforting where the physical examination reveals nothing.

Pleural effusion casts a shadow on the screen and the pathological anatomy of this condition has been illuminated by the studies of Engel-

bach and Carman. In lung abscess the X-ray is of first-rate importance. In every case of continued fever after the crisis of a lobar pneumonia, where the diagnosis of pus in the pleural sac is not readily established, a radiograph should be taken. This will show the cases of interlobular empyema, obscure lung abscess, and delayed resolution.

By a single examination of the stomach after a bismuth meal we can learn the shape and size of the stomach, the tone of the gastric muscle, the rate of emptying the stomach, whether there is stasis or not, whether there is any growth into the lumen of the stomach, such as carcinoma, whether or not there is any constriction of the lumen-hourglass stomach. In early, simple gastric ulcer the X-ray is merely an adjunct to a well-taken clinical history. Chronic ulcer may show stenosis. Perforating ulcer may show the characteristic diverticulum.

ALBERT MILLER.

Czerny, V.: The Non-Operative Treatment of Cancer (Zur nichtoperativen Behandlung des Krebses). *Verhandl. d. Gesellsch. deutscher Naturforsch. u. Ärzte*, 1913, ii, part 2, 125.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author describes cases that were freed from malignant new-growths by non-operative means. A woman, operated upon six times for sarcoma of both superior maxillæ, was energetically treated with röntgen rays. Eight years later she was still free from recurrences. The results obtained in three cases of epithelioma prove that superficial cancers of the skin can be cured by mesothorium, radium, and röntgen rays. A carcinoma of the lower lip, an epithelioma of the right temporal region, and a carcinoma of the left temporal region were treated by electric-light rays. A female patient with a cancerous growth which hung from the tip of the nose and made the ingestion of food almost impossible, and who had also a rodent ulcer at the outer angle of the nose, was treated with a Forest needle and mesothorium with such good results that it was possible to leave her to the care of her family again.

Two lupus carcinomata were cured by fulguration and another by the röntgen rays. An apparently sarcomatous tumor of the parotid region, treated twice by radical operation, recurred. It was cured by injections of salvarsan into the tumor and gluteal region. It seems, however, that lues was not definitely excluded. A primary round-celled

sarcoma in the region of the lachrymal gland was benefited by salvarsan and röntgen rays. In this case the glands on both sides of the neck were the size of a pigeon egg. The glands decreased in size and the primary tumor was operated upon by the osteoplastic method. The protrusion of the eyeball recurred and the treatment was supplemented by the injection of cholin with such good results that a complete cure is expected.

An apparently inoperable involvement of the lymph-glands after sarcoma was cured by thorium-X injections into the glands, followed by treatment with röntgen rays. The patient has been free from signs of recurrence for six months. An epithelioma nuchæ was removed from one patient with a Forest electrocaustic needle, and a perfect healing followed. Two cancers of the breast adherent to the ribs were healed by electric-light rays and fulguration. An advanced recurrence of inoperable type in a carcinoma of the stomach was treated by röntgen rays and has remained healed for two years. This case, the author claims, is the best evidence he can offer in favor of the healing of cancer by means of röntgen rays applied with sufficient intensity. Another case shows with what good results an almost inoperable gastric carcinoma at the cardia can be treated by the electrocautery and röntgen rays. With a carcinoma of the scrotum all operative procedures had failed. Curetting followed by fulguration succeeded in producing a flat scar, but only six weeks later, local recurrences and internal metastases took place. A carcinoma of the abdominal wall following an operation for carcinoma of the splenic flexure was removed with a Forest needle, and healing followed. Death occurred after several months, however, from metastases in the liver. A cylindrical-celled carcinoma of the rectum, which on account of its extent could not be completely removed by operation, was treated after excision by fulguration. At the end of two and one-half years, the patient was still free from recurrences.

Mesothorium and thorium-X, when used in cases of ulcerative cancers, often bring about a caseous breaking down and a flattening of the granulations. The action of borcholin and selenvanadium on tumors and testicles of animals is discussed. In the case of tumors, hyperæmia and hæmorrhage begin the process of resorption. The spermatozoa are destroyed at the point at which the cholin is injected.

COLLEY.

GYNECOLOGY

UTERUS

Berczeller, I.: A Palliative Treatment of Inoperable Cervix Carcinoma with Powdered Sugar (Palliative Behandlung inoperabler Portiocarcinome mit Zuckerstaub). *Zentralbl. f. Gynäk.*, 1913, xxxvii, 852.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author considers the local use of powdered sugar a suitable and convenient method of palliative treatment. The foul odor is decreased, the lochia diminished, hæmorrhage lessened, and the appearance of the carcinomatous area is improved. The patient steadily gains strength. It is advisable to use this method also before operation. The cervix is brought into view by means of a speculum and sponged dry. The speculum is filled partly with powdered sugar and an iodoform tampon is inserted. This is repeated daily, or two to three times a week.

MORALLER.

Ries, E.: Theoretical and Practical Foundations of a Radical Operation for Carcinoma of the Cervix Uteri. *J. Am. M. Ass.*, 1913, lxi, 1266.

By Surg., Gynec. & Obst.

The title explains the contents of the paper. Our knowledge of cancer is built on clinical and pathological observations. Cancer in its beginning is a purely local disease. It invades the host in two ways: first, by continuity, and secondly, by metastases. Contiguous growths invade lymph-channels early and regularly, the blood circulation rather incidentally and less frequently. The primary tumors and the metastases degenerate and become infected. As long as the cancer is confined to the primary focus, the removal of a block of tissue which contains all of the cancer eliminates the latter. If colonies have become established, the removal mass ought to comprise the original tumor and all the metastases and all intervening tissue as well; in other words, a prerequisite of a radical carcinoma operation is that of a continuous rather than a non-continuous dissection. The dissection of the carcinoma block in carcinoma of the breast is the best example of continuous dissection and the results are very fair. Inherent and accessory risks in cancer of other parts of the body limit the immediate success of the operation, though continuous dissection might improve the remote results. The accessory risks, for instance, in the cervix cancer are the anæsthetic, and infections carried in from outside, but the gravest accessory risk in carcinoma of the cervix is that of sepsis from the infected primary tumor brought about by tearing of the cervix or from crumbling lymph-nodes or from lymph-vessels in the neighborhood. The inherent risks are hæmorrhage, injury

to the uterus, and production of large wounds in the connective tissue. Another weak point in our cervical cancer operation is the unavoidable breach in the principle of continuous dissection. To avoid the latter, it would be necessary to include part of the ureters and also the pelvic diaphragm and the paracolpium. But this means greater demands on the tolerance of the patient. However, at present, we have no reliable means of determining beforehand the limits of this tolerance in individual cases. Operative mortality and remote results therefore have the tendency to show an inverted ratio. The better the surgeon's technique, the greater things he may dare. In conclusion, it is to-day wrong and unscientific to withhold the chance of operation from any patient with cancer of the cervix, and this in spite of all risks which the operation involves.

HENRY SCHMITZ.

Herzfeld, B.: A Contribution to the Statistics of Carcinoma of the Uterus (Ein Beitrag zur Statistik des Carcinoma uteri). *Petersb. med. Ztschr.*, 1913, xxxviii, 167.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Of 7947 female out-patients treated during ten years, 153 had cancer of the uterus. Of these 57, or 37.2 per cent, were still operable and 96, or 62.8 per cent, inoperable. The small number of operable cases Herzfeld attributes to the delay of the patients in seeking medical aid, and he hopes that an improvement will occur as a result of the propaganda instituted by the Baltic Physicians' Congress. A small increase (10 per cent) in the operable cases has occurred since this congress.

KÖHLER.

Broun, L.: Cancer of the Uterus; Importance of Early Diagnosis. *N. Y. St. J. Med.*, 1913, xiii, 513.

By Surg., Gynec. & Obst.

The author quotes Frederick L. Hoffman, statistician of the Prudential Insurance Company of America. Hoffman states that cancer is becoming more prevalent in the United States every year, and that now its death toll is greater than that of tuberculosis. In the United States the death rate per annum is 75,000; for the civilized world, nearly half a million. Among men between the ages of 45 and 64 the proportion of deaths from cancer is 7 per cent, among women 16 per cent. Cancer of the stomach and liver is equally prevalent in men and women, but cancer of the breast and generative tract is what causes the greater percentage of cancer among women.

Certain occupations, especially those in which persons are exposed to coal soot and products of coal combustion seem to predispose to cancer.

The author quotes Cullen, Winter, and Wertheim as regards extension of cancer from the uterus and discusses Schauta's extensive vaginal operations.

Wertheim's abdominal operation is also taken up. Broun believes that Wertheim's vaginal and parametric clamps are of value in avoiding a possible sepsis or venous bleeding. From the statistics of Wertheim, 19.5 per cent of all cases of cancer of the uterus are cured; of Schauta, 16.1 per cent; while the author states that a simple hysterectomy cures only about 8 per cent.

Faure's classification of uterine cancer is accepted, and the author concludes that by education of the people, early diagnosis will enable more lives to be saved by operation. EUGENE CARY.

Weibel, W.: The Clinical Position of Carcinoma of the Corpus Uteri (Die klinische Stellung des Carcinoma corporis uteri). *Arch. f. Gynäk.*, 1913, c, 135.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Carcinoma of the body of the uterus is relatively rare. At the Wertheim Clinic only 67 cases have been operated upon in 14 years; two cases were inoperable and one refused the operation. That makes a total of 70 cases as compared to 1500 cervical cancers, 714 of which could be operated upon. The ratio of cancers of the body to those of the cervix is therefore 5:100, and if only the operable cases are considered 9.5:100. Among the symptoms hæmorrhage takes the first rank. The primary mortality was 10½ per cent. Twenty-four per cent had never been pregnant. There appears to be a large number of multiparæ among the cases of cancers of the body. The most essential difference between cancers of the cervix and the body lies in the fact that in carcinoma of the body the parametrium is involved in only 16 per cent, whereas in cervical carcinoma it is involved in 55 per cent. Recurrences took place in 20 of the 67 cases of cancer of the body, and these were usually local. Permanent cures varied from 51.2 per cent to 60 per cent. The radical abdominal operation is to be preferred.

KLEIN.

Candela y Plá, M.: Surgical Treatment of Uterine Cancer (Chirurgische Behandlung des Uteruskrebses). *Crón. méd.*, Valencia, 1913, xxv, 97.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Wertheim's operation does not fulfill all the requirements of the surgery of uterine cancer. The complexity of the problem and the lack of positive indications as a basis for the determination of operability render the collection of statistics so difficult that the requirements of critical investigators are not satisfied. The radical operation, involving the cleaning out of the pelvis, is of prophylactic importance only in cases where the infiltration of the gland nodes and cellular tissue is not yet cancerous. Under these circumstances the total extirpation of the uterus with the vaginal vault either abdominally or vaginally may give

just as good results, without the added danger of the extended operation. In cases at the limit of operability an extended Freund's operation with the removal of the parametrium no wider than necessary for the enucleation of the uterus from its normal attachments, and of the vaginal vault by the thermocautery and the use of Wertheim's forceps, is acceptable. The secret of a cure is an early diagnosis, more so in cancer than in any other disease. A general international vote would find the followers of Wertheim's operation in the minority. Physicians are requested to join the movement, which originated in Germany, to improve the curability by early diagnosis. MICHAEL.

Von Lingen, L.: Giant Myomatous Cysts (Zur Kasuistik der Riesenmyomcysten). *Zentralbl. f. Gynäk.*, 1913, xxxvii, 1109.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The case was one of giant myomatous cyst in which a diagnosis of an ovarian cyst had been made. The weight of the tumor was 45½ pounds, including the cystic fluid. It originated from the posterior wall of the uterus; the anterior wall was free from the tumor in plastic manner.

The author points to the rarity of these tumors. According to the genesis these tumors are divided into (1) lymphangiectatic, (2) degenerative, due to a necrobiotic process in a solid tumor, (3) solid tumors originating, according to von Recklinghausen, in remains of the wolffian duct. Microscopically, this tumor proved to be lymphangiectatic in origin.

MARKUS.

Thomson, J. W.: Tuberculosis of the Uterus. *Lancet*, Lond., 1913, cxxxv, 1000.

By Surg., Gynec. & Obst.

The author reports a case of tuberculosis in the body of the uterus in a girl aged 20. At the age of 13 she was operated on for dysmenorrhœa. Her appendix was removed at 18. Her main symptom was frequent, urgent, and painful micturition. A large amount of pus containing colon bacilli was found in the urine, but no tubercle bacilli. Both ureters were thickened, the right more markedly. A communication was found to exist between the bladder and uterus. On separating the uterus from the rectum an aperture one inch in length was left in the rectum. The lumen of the rectum was narrowed as in Jellet's case. There was a serous line of demarcation between the healthy cervix and the body of the uterus. The histological study by Stewart showed the typical lesions of tuberculosis.

C. H. DAVIS.

Müller: The Findings in Recurrent Hæmorrhages after Röntgenization (Befund bei Rezidivblutungen nach Röntgenbestrahlung). *Monatschr. f. Geburtsh. u. Gynäk.*, 1913, xxxviii, 397.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Hæmorrhages reappeared in a myomatous patient after a menopause of seven months. Bleeding continued in spite of another application of the X-ray.

At the patient's request operation was performed. Two intramural myomata were found in the uterus and the ovaries showed senile change. Microscopic examination revealed myomatous tissue, a normal endometrium, and atrophic ovarian tissue. The cause of the recurrence was the presence of a remnant of functioning ovarian tissue; hence a continuation of the röntgenization would have led to the desired cure. Müller recommends therefore that two or three treatments be given after the cessation of the hæmorrhages.

ZINSSER.

Sanes: Is Membranous Dysmenorrhœa Caused by Endometritis? *J. Am. M. Ass.*, 1913, *li*, 1433. By Surg., Gynec. & Obst.

Sanes uses the term "menstrual membrane" instead of "membranous dysmenorrhœa" since the passing of membranes during menstruation is not always accompanied by pain. It is a much more common condition than is generally supposed.

Shreds and epithelium are invariably found in clots. Desquamation of the vagina, and even skin, have also been observed by some authors during menstruation.

Basing his descriptions of the endometrium on the authoritative statements of Milnes, Marshall, Heape, Leopold, Westphalen, Young, Hitchman, Meerdervoort and many others, he classifies the histology of the normal endometrium as follows:

1. Quiescent stage: During which the epithelial cells lining the surface of the mucosa and glands show considerable difference in their shape, size, and nuclei. The glands appear straight or slightly tortuous in regular and almost parallel rows. Each gland is surrounded by a network of spindle-shaped connective-tissue elements, and outside of it by the stroma. The stroma appears as a soft protoplasmic mass, imperfectly differentiated into cells. The blood supply of the superficial surface of the mucosa consists of capillary tracts, running parallel to the surface epithelium.

2. Premenstrual or constructive stage: Serous infiltration of the upper layer of the mucosa. Round-cell infiltration and capillary congestion in the stroma. The glands become very much dilated and more tortuous, their lumina are filled with mucus, and in some places also with leucocytes and red cells. These glands are found only in the deep layers of the mucosa. The superficial layer is poor in glands, thus forming two layers in the endometrium, an upper compact one and a lower spongy one.

3. Destructive or menstrual stage: Arterial congestion leads to the dilatation of the superficial capillary tracts. Vascular pressure is increased. Migration of the red cells occurs, and the flow is established. The mucosa is destroyed to a various degree and also carried off as shreds and debris. The denudation, according to most authorities, is due to a mechanical cause.

The extravasation and accumulation of blood in the spongy layer of the endometrium loosens and

separates this lower layer from the upper compact and more resistant one, which is then expelled under the influence of uterine contractions during menstruation. The menstrual membrane presents a varied appearance, both grossly and microscopically, and this not only in different persons and at different periods, but in the same person during the same period. Generally, the picture is that of the degenerative changes occurring in the upper layer of the endometrium during the premenstrual stage. As to the pathology, at present there are no clinical or microscopic evidences to show that the exfoliation of the mucous membrane is due to an inflammation of the endometrium or to any disease in the adnexa, which are found normal in many cases of membranous dysmenorrhœa.

Neither is sterility a necessary sequel. All these conditions may be associated with menstrual membranes, but are neither the cause nor result of them. It is further shown that certain species of female monkeys, whose endometrium undergoes similar changes during menstruation to those of the human female, expel uterine membranes at each menstrual period. If it is physiological in one case, why not in the other? As a theory for the cause of greater denudation in some persons than in others, the author suggests that the action of the ovarian hormone which normally produces menstruation is more intense in some cases than in others, or that the susceptibility of that individual is greater, thus bringing about more destruction of the endometrial mucous membrane in these cases.

L. ROBINE GOLDSMITH.

Watkins, T. J.: Infantile Type of Uterus with Dysmenorrhœa. *Surg., Gynec. & Obst.*, 1913, *xvii*, 461. By Surg., Gynec. & Obst.

The author gives the result in the treatment of sixty severe cases which required hospital attention. The early ones were treated by using tents repeatedly until free dilatation was obtained. The later ones were treated with an intra-uterine stem, which is a silver tube made in various sizes. This is felt to be better than the tent, as its use is attended by less danger of infection and can be worn for a longer time. The tube is inserted under strict antiseptic precautions and is worn from one to three months. It is sutured in place. The principle of the treatment is that the tube stimulates uterine development. There were sixty cases studied, but in only thirty-one was it possible to follow the cases up to the present time. Of the 31 cases fifteen were cured; ten improved and six not benefited.

Martin, F. H.: Prolapse of the Uterus. *J. Am. M. Ass.*, 1913, *li*, 1246. By Surg., Gynec. & Obst.

Martin recommends his modification of the Dührssen-Watkins-Wertheim anterior transposition operation and a restoration of the levator ani muscles as the most modern and satisfactory for descent of the uterus. It is an ideal procedure for women past the child-bearing period. In child-

bearing women, if justifiable by the severity of the condition, he renders the patient sterile by interrupting the tubes. His modification consists in dissecting free the vesico-uterine ligament. The bladder is carefully elevated to the level of the top of the fundus of the uterus. The cervical ends of these bands are severed, appropriately shortened, crossed upon each other to make a support for the bladder, and the ends are securely transplanted into the fundus of the uterus just in front of the crest. The anterior vaginal wall is closed. After the fundus has been delivered, he inspects the sacro-uterine ligaments. A pair of 8-inch artery forceps are thrust through the base of each broad ligament, at the level of the internal os, and from a point in front of the cervix from within the longitudinal vaginal incision into the cul-de-sac of Douglas. The sacro-uterine fold is grasped at a point about one-third of the distance from its uterine end and the fold is drawn through the route of the forceps on either side of the cervix. The latter is pushed upward and backward and the folds of the ligament are secured firmly in front of the cervix. The fundus is then fixed by the vesico-uterine ligaments as heretofore described. The levator ani muscle suture completes the operation. Martin avoids amputation of the cervix wherever possible. He desires to have the cervix riding well back of the reconstructed perineum to aid in preventing the uterus paralleling the vagina.

HENRY SCHMITZ.

Montgomery, E. E.: Vagino-Uterine Prolapse and Its Effective Treatment. *J. Am. M. Ass.*, 1913, lxi, 1245.

By Surg., Gynec. & Obst.

The diseased and distorted uterus is removed and prolapse of the bladder and rectum is prevented by suspending these organs from the upper surface of the broad ligament. The possibility of a cystocele following the operation is obviated by the interposition of the levator ani muscles. Montgomery claims that by this procedure the normal length of the vagina is preserved.

HENRY SCHMITZ.

Kaarsberg, L., and Seedorff, M.: Genital Prolapse and Especially the Results of the Treatment (Der Genitalprolaps mit besonderer Rücksichtnahme auf das Resultat der Behandlung). *Versamml. d. Nord. chir. Vereins*, Kopenh., 1913.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Following a short historical introduction, in which the authors in the main accept the Halban and Tandler theory of genital prolapse, although they, like Martin, attach more significance to the connective tissue than do the former, they present their own material. Two hundred and ninety-nine patients were operated upon between 1897 and 1912. It was possible to determine the condition of 292 of these. Three of these died later. The others are divided according to the method of operation as follows: Schauta-Wertheim operation 44 times with 7 partial recurrences; vaginal fixation and plastic operation 7 times with no recurrences;

colporrhaphy and colpoperineorrhaphy or anterior colporrhaphy 126 times with 27 recurrences; colpo-perineorrhaphy (incomplete rupture) 54 times with 4 recurrences; Tait's or Watkins' method for complete rupture 27 times, with one complete failure and 3 cases of partial incontinence; vaginal plastic operation and ante-fixation by laparotomy 20 times with one recurrence; and extirpation of the uterus and plastic operation on the vagina 11 times with 4 recurrences.

With the Schauta-Wertheim operation no recurrence with cystocele took place; in all cases of failure cervical hypertrophy took place. In regard to the technique employed, the authors since 1907 performed an extensive separation of the bladder and a high colpoperineorrhaphy with suture of the levator. The Olshausen method of ventrofixation was employed almost exclusively. S. A. GAMMELTOFT.

Gammeltoft: Results of the Treatment of Genital Prolapse in the Gynecological Department of the Obstetrical Hospital and in the Gynecological Department of the Reichs Hospital (Resultate der Behandlung des Genital prolapses in der gynäkologischen Abteilung der Entbindungsanstalt und der gynäkologischen Abteilung des Reichshospitals). *Versamml. d. Nord. chir. Vereins*, Kopenh., 1913.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The material consists of 150 cases operated upon between 1900 and 1912. Six patients died as a result of the operation. The operative mortality, therefore, was 4 per cent. One hundred and thirty-two patients were re-examined; of these 5 died later, the result of the operation not being known. Of the remaining 127 there are 81 completely successful, 17 partially successful cases, and 24 recurrences. In 3 cases the operation was successful, but a cervical hypertrophy developed later. The 17 partially successful cases are those in which the patients have only slight symptoms and those in which a subjective cure resulted, but in which the objective findings were only partially successful.

Of the recurrences, 13 were anterior colporrhaphies and colpoperineorrhaphies, 4 cases operated upon by Westermarck's method, 3 by Schauta-Wertheim's, and 2 with a vaginal plastic operation and an Olshausen's fixation. The Schauta-Wertheim operation was performed 5 times, in 2 with good results and in the others with recurrences. Westermarck's lateral colporrhaphy was performed 11 times.

Of the 8 cases re-examined, 4 were successful and 4 had recurrences. The poor results were probably due to the fact that the technique used was wrong until Westermarck himself demonstrated it at the clinic in August, 1912. Twenty cases of displacement of the uterus were treated by plastic operations on the vagina. Of these only 2 had recurrences. Both were fixed by Olshausen's method. In those patients who were operated upon by Doleris' or Alexander Adams' methods, no recurrences resulted. For the abdominal fixation methods, therefore, there were only 10 per cent of recurrences, whereas for the

vaginal plastic methods alone there were 20 per cent. Eleven of the patients operated upon were delivered of full-term children. Two were delivered with forceps and had recurrences. Of the remaining 9, one had the sensation of prolapse but no recurrence, and one had a recurrence.

In regard to the technique the author recommends careful separation and lowering of the bladder. In addition a high colpoperineorrhaphy is advised. The levators should not be exposed but should be grasped with deep carrying sutures. Since ventrofixation or ventrosuspension has been performed more frequently the results have improved; among the last 50 cases there were only 9 per cent recurrences. Extended colporrhaphy combined with abdominal fixation or suspension seems to offer the best results.

Möller, O.: Results of Operations for Genital Prolapse (Resultate von Operationen wegen Genitalprolaps). *Versamml. d. Nord. chir. Vereins*, Kopenh., 1913.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The material comprises 260 patients treated from 1894 to 1912. It was possible to trace 220 of these patients. Since 1899 the methods of Simon, Hegar, and Tait have been employed, and since 1909 suture of the levator ani and the Schauta-Wertheim operation in some cases. Double plastic operation on the vagina was employed in 124 cases, with recurrence in 14.5 per cent; a marked improvement is noticeable since the levator ani suture has been performed. Colpoperineorrhaphy was performed in 43 cases with recurrences in 23.1 per cent. These poor results are probably due to the fact that formerly not enough attention was paid to slight degrees of descent of the anterior wall and beginning cystoceles.

The Schauta-Wertheim operation was performed in 25 cases; in only 14 of these has sufficient time elapsed for observation, and in one of them recurrence took place, the patient being 71 years old and the uterus atrophic. Ventrofixation accompanied by plastic operation on the vagina was employed in 15 cases, but was unsatisfactory. If the Schauta-Wertheim operation can be performed it should be given the preference. The procedure is less dangerous and the stay in the hospital considerably less. The Tait operation for complete rupture was performed 21 times. Four of these were improved, 12 cured, and 5 did not return for re-examination.

S. H. GAMMELTOFT.

Polak, J. O.: A Study of the End-Results of the Baldy-Webster Operation. *J. Am. M. Ass.*, 1913, lxi, 1430.

By Surg., Gynec. & Obst.

Polak discusses the principles of uterine support and the action of its supporting ligaments, describes the action of the Baldy-Webster operation and its effect on the position of the ovaries, and demonstrates his technique for the operation. He has studied the records of 400 operations performed in his clinic from January 1, 1908, to January 1, 1913,

and renders the following summary: 24 patients have been lost track of, leaving 376 for analysis. Two hundred and two, or more than 50 per cent, have perfect pelvis, the uterus is in normal position and free from adnexal or parametrial inflammations. One hundred and sixty of this number have complete relief of all pelvic symptoms. Thirty-nine complain of pelvic pain, burning sensation over the lower abdomen, and menstrual pain. Three have died from causes independent of the operation, before or soon after leaving the hospital. Of the remaining 174, fourteen have had secondary operations for pelvic or abdominal conditions. The intra-abdominal pathological conditions in each have been carefully studied. These have shown (1) unequal development of the ligaments with lateral version of the uterus; (2) enlarged, prolapsed ovaries, due to elongation of the utero-ovarian ligament and adhesions; (3) adhesions of the sigmoid to the ligamentous loop; (4) oedema of the round ligaments from constriction with subsequent adhesions to intestines; (5) if the uterus is large and sinks in the intestinal loops, the ovaries are thrown upward and inward and become adherent to one another behind the uterus, forming a sensitive mass. These findings have been constant in the reopened cases. In 32 patients, the uterus had relapsed and was found retroverted and prolapsed, carrying the ovaries with it. Thirty are wearing pessaries. Eighteen are unimproved. Ten have lateral version and pain in the side toward which the uterus is drawn. Sixteen have prolapsed and cystic ovaries. Two have ovaries lying anterior to the broad ligament. Twenty-six have thrombosis of the pelvic veins. Twenty have had children subsequent to the operation. Twenty-two have aborted. In all, 42 pregnancies occurred from which observations could be made. No complication of labor has been recorded; only one delivery has required forceps. Fourteen of the pregnant women have had great pain and discomfort during the first trimester; only four relapses have followed labor.

The operation should not be selected for heavy uteri with the cervix in the axis of the vagina. It is successful when the uterus is small, the cervix points backward, and the ligaments are equally developed.

HENRY SCHMITZ.

Childe, C. P.: Suggestions for the Technique and Performance by a New Method of Wertheim's Abdominal Panhysterectomy. *Proc. Roy. Soc. Med.*, 1913, vi, Obst. & Gynec. Sect., 339.

By Surg., Gynec. & Obst.

The author points out that the patients operated on by the Wertheim method are often lost through infection. Their resistance is lowered from the disease; two extensive wounds are exposed to infection; the pelvic wound is open to the external surface by way of the vaginal canal; Retzius's space is freely opened and a dead space left after the operation, all of which favors infection.

The patient, anæsthetized for the operation, is

placed in the lithotomy position and all the soft growth removed with scissors and sharp spoon. The raw surface left is thoroughly cauterized with Paquelin's cautery. The vagina is then scrupulously dried and painted with iodine. Finally the vagina is tightly packed with dry sterile gauze, one end of which is left hanging out of the vagina. This gauze is removed just before opening the vagina.

The author emphasizes the following points in the operative technique:

1. Secure perfect hæmostasis if possible.
2. Leave no foreign bodies such as ligatures in the wound.
3. Use no gauze for drainage.

He employs only four silk ligatures, one for each ovarian and one for each uterine artery. For the rest he depends upon the use of a heavy crushing clamp and the cautery. When hæmostasis is not complete gauze may be packed in the pelvis and left for 24 hours.

C. H. DAVIS.

ADNEXAL AND PERIUTERINE CONDITIONS

Keep, C.: Two Cases of Solid Pedunculated Papilloma of Ovary. *Proc. Roy. Soc. Med.*, 1913, vi, Obst. & Gynec. Sect., 284. By Surg., Gynec. & Obst.

The author reports two cases with photographs of the specimens and microscopical sections of the growths. The chief points of interest in these cases seem to be: (1) The bundles of long, wavy, fibrous tissue composing the stroma, which in no way resembles the short fibres of ovarian stroma and ovarian fibromata; (2) The attachment of each tumor by a distinct pedicle to an otherwise apparently healthy and active ovary.

The author could find no reference in the literature to any ovarian tumor possessing these characteristics. He believes that the tumors arise from an embryological area such as the Müllerian duct or the pronephros. The Pathological Committee reported: "We have examined the specimens and sections and agree with the description given by the author. We are of the opinion that the growth has originated in the ovary, and is not of Müllerian origin."

C. H. DAVIS.

Lizcano, P.: Inflammation of the Adnexa and Neurosis, from a Surgical Standpoint (Adnexitzündung und Neurose vom operativen Standpunkt). *Siglo méd.*, 1913, lx, 193.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

To secure positive results in the treatment of chronic disease of the adnexa a very minute general and local examination is necessary. The condition of the nervous system exerts such an intense influence on the functions of the genital system that these "pseudo-uterine" patients are often subjected to unnecessary local treatment. On the other hand, the bad influence to which such nervous conditions are exposed by changes which, even on bimanual palpation, are of little apparent importance must not be overlooked. A condition which is at times

important, is the sclerotic ovary with its characteristic pathological changes, of an unknown but not bacteriological origin, and which shows on palpation a slightly enlarged, not adherent, firm organ with small cysts on its surface. These findings are significant in the interpretation of local disturbances as causes of general symptoms. An operation is justifiable in all such cases if the uterine treatment is unsuccessful.

MICHAEL.

Wallart, J.: So-called Salpingitis Isthmica Nodosa (Weiterer Beitrag zur sogenannten Salpingitis isthmica nodosa). *Ztschr. j. Geburtsh. u. Gynäk.*, 1913, lxxiii, 77.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The patient, a nullipara 54 years old, died from embolism of the pulmonary artery following thrombosis of the left femoral vein. A spindle-shaped mass, 14 mm. long, 6 to 7 mm. thick, of firm consistency was found in the left tube close to its insertion into the uterus. A cyst was found in the right ovary and numerous subserous, submucous, and intramural myomata were detected in the uterus. It was suspected that the tumors were multiple adenomyomata of the uterus according to von Recklinghausen. The tumors were microscopically examined in serial sections. The uterine tumors were myomatous and not adenomyomatous, as there were no traces of epithelial inclusions. The tumor of the tube, however, presented in its center an adenofibromyoma or salpingitis isthmica nodosa.

It consisted of muscle and connective-tissue fibers running in all directions, within which were embedded numerous arteries and veins and epithelial formations of many different varieties. The epithelial structures were disseminated downward into the interstitial portion of the tube and uterine musculature and also into the loose tissue of the mesosalpinx at the isthmic portion of the tube. There was no connection between the epithelial tumor cells and the mucosa of the tube. The epithelial tubes extended over Müller's duct into the wolffian body. Therefore the suspicion that the epithelium originated from the mesonephros was suggested. Remnants of the wolffian body were found in both ovaries. Signs of former and still existing inflammatory processes, round-cell infiltration, and abscess were found in the tube. Therefore the theory of mesonephritic origin had to be rejected in favor of a purely inflammatory one. A purulent process in the tubal wall caused a displacement of the tuba mucosa into the external layers of the wall. The displaced mucous membrane elements continued to proliferate and led to the formation of the tumor.

BRETZ.

Somers, G. B., and Blaisdell, F. E.: The Anatomy and Surgical Utility of Sacro-Uterine Ligaments. *J. Am. M. Ass.*, 1913, lxi, 1247.

By Surg., Gynec. & Obst.

This is a study of the structure and function of the sacro-uterine ligaments based on the comparative

anatomy of guinea pigs, Belgian hares, cats, dogs, and monkeys, and the application of a surgical shortening of the same for the correction of retroflexed uteri. The sacro-uterine ligaments are peritoneal folds containing muscle and fibro-elastic tissue. These are intimately related, so that it is difficult to decide which should be included in and which excluded from the true ligaments. These structures in the lower animals are not, however, sacro-uterine but recto-vaginal. The peritoneum forming the folds is much thicker than the surrounding peritoneum. The hypertrophy is confined to the fibrous layer. Within the stratum fibrosum, and therefore distinctly within the peritoneal layer, were found a number of small fasciculi of unstripped muscle fibers derived from the myometrium. The muscle fibers pass to the fold attached to the vagina and on backward toward the rectum, always within the fibrous layer of the peritoneum. This observation is thought to be new, and it is suggested that this muscle be called the true recto-uterine muscle. This arrangement is not only found in lower animals but in the human female, but here the structures are not recto-vaginal but sacrouterine. The fibro-elastic tissue is contained within the parametrium just beneath the plica sacro-uterinæ. It is a condensation zone of the fascia endopelvina. The course of the fibres is from the cervix toward the presacral fascia. This is the sacro-uterine ligament, which may be considered the fibro-elastic suspensorium of the uterus. With these ligaments are intermingled muscle fibres derived from the uterus. When these latter contract they pull on the sacro-uterine ligament, i.e., the fibro-elastic network, and raise the uterus. It should be termed the levator uteri muscle to distinguish it from the recto-uterine muscle mentioned above. In studying the course of the fibro-elastic network within the peritoneal fold it was found that a distinct mass of fibers ran from the anterior two-thirds of the sacro-uterine fold down to the vault of the vagina. The function of these fibers is to sustain the vault-like character of the posterior and lateral fornices.

Conclusions: The true sacro-uterine ligament is quite distinct from the peritoneal folds. In function, it is inseparably connected with the peritoneal folds and the muscle fasciculi. The musculo-fibrous character of the peritoneal folds renders them chiefly supporting. The fibro-elastic structures preserve the normal position of the uterus and vaginal vault. The levator uteri muscle raises the uterus in response to reflex stimuli. The surgical adaptability of these structures is assured by their accessibility, by their ligamentous character, and by their lifting the cervix on being shortened. The operation is performed by exposing the insertions of the ligaments by a circular incision around the cervix. The ligaments are isolated from the surrounding structures by blunt dissection. The shortening is performed by doubling the ligaments or by sewing them to each other, or by separating them from their attachment and sewing them to a new portion.

HENRY SCHMITZ.

EXTERNAL GENITALIA

Vogel, F.: Traumatic Rupture of Vagina with Prolapse of the Small Intestines (Traumatische Scheidenruptur mit Dünndarmvorfall). *München. med. Wchnschr.*, 1913, ix, 1326.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The patient, 68 years old, had had a prolapse since the first labor, which finally increased to the size of two fists.

She suffered a severe injury to the prolapse which was followed by a protrusion of the bowels causing severe pain. The patient wrapped the bowels in pieces of paper which she found lying about. When an examination was made an hour later, the patient was in a state of shock, the pulse was 115, the abdominal wall retracted and a prolapse the size of two fists was found studded with decubital ulcers. On the posterior surface of the prolapse a laceration 4 cm. long was seen from which a mass of ileum protruded, which was the size of a man's head. The adherent pieces of paper were removed by normal saline irrigation. The bowel was replaced without pain and without anæsthesia and with the patient in the knee-elbow position. The uterus and adnexa also were replaced. The true pelvis was drained and the vagina tamponed. A profuse evacuation of the bowel occurred during the following night. Besides tympany, nausea, vomiting on the fourth day, and fever up to 101° F., no other signs of peritoneal irritation occurred. The rupture healed within four weeks.

PONFICK.

Ludwig, F.: Uretero-Vesico-Vaginal Fistula After a Criminal Abortion (Ureterblasenscheidenfistel nach kriminellem Abort). *Ztschr. f. urol. Chir.*, 1913, i, 459.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author describes a uretero-vesico-vaginal fistula caused by a bougie passed violently into the vagina several times for the purpose of producing an abortion. A small vesico-vaginal fistula was produced and likewise one from the ureter to the bladder which was demonstrated cystoscopically. The vesico-vaginal fistula was closed by an abdominal operation with satisfactory results for three months, but, as a result of trauma, dribbling of urine recommenced at that time. Examination showed that there was no longer a vesico-vaginal fistula, but, as a result of a paravesical abscess, communication had been established between the right ureter and the vagina, which necessitated a nephrectomy.

WEIBEL.

Mattisohn: Prognosis of Infantile Gonorrhœal Vulvovaginitis (Die Prognose der Vulvovaginitis gonorrhœica infantum). *Arch. f. Dermat. u. Syphil.*, 1913, cxvi, 817.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Mattisohn advocates an active treatment in infantile gonorrhœal vulvovaginitis. The duration

of the disease varied from 95 days to almost 11 months in his cases. Besides the vagina and vulva, the urethra was also treated without any regard to the finding of gonococci. The cervix, however, was never treated. In acute infections absolute rest in bed and cold applications are used for the first two weeks, then irrigations with 2 per cent albargin, $\frac{1}{4}$ to 1 per cent protargol, or 0.2 per cent ichthargan are used. As soon as the discharge becomes serous and examination of it gives negative findings, irrigations with silver albumin preparations and astringents, such as zinc chloride or alum in weak solution, are alternately used. The author re-examined 31 former patients, some as late as five years after the treatment. In 13 cases a profuse secretion was present and in 8, or 26 per cent, gonococci were again found. The results obtained are better than those in adult women. An ascending infection was never seen. The author inclines to the opinion of Cahen-Brachs that a resistance to the advance of the gonococci is furnished before puberty by the firmly closed external os uteri. The prognosis, therefore, is more favorable in infants and girls than in menstruating women on account of the limitation of infection to the lower genital tract. **HOLSTE.**

Puppel, E.: Dry Treatment of Leucorrhœa (Die Trockenbehandlung des Fluor albus). *Fortschr. d. Med.*, 1913, **xxxi**, 714.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The dry treatment of leucorrhœa consists in the use of yeast or bolus or a combination of both, termed xeræ. A milk glass speculum is inserted into the vagina, the latter wiped clean and the powder blown in by a powder blower, known as a siccator. The use of this instrument should not be trusted to the patient, as has been done with the irrigator. A minute description of the treatment of leucorrhœa in virgins, of acute and chronic gonorrhœa, and of chronic pelvic infections is given.

VON MILTNER.

Thomä, F.: The Etiology of Genital Atresias (Zur Ätiologie der Gynatresien). *Monatschr. f. Geburtsh. u. Gynäk.*, 1913, **xxxviii**, 1.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Thomä investigated the formation of vaginal atresias based on the studies of Felix concerning the development of the female genital organs. He opposes Nagel's opinions on this subject and Veit's theory of the acquired causation of most of the genital atresias, and concludes as follows: All vaginal atresias are acquired in which (1) the history shows a vulvovaginal inflammation, (2) which show the result of such inflammation in scars, frequently associated with irregularities in the form of the occlusion, or (3) which show retention of secretions. All those cases are certainly congenital which are recognized soon after birth by the symptoms of retention of secretion. In addition those cases are congenital which show anomalies of development other than vaginal atresia, as, for instance, defect-

ive development of the vestibule, unusual breadth of the urethral meatus, malformations of the uterus, etc., provided that none of the first mentioned points are present. Other cases of vaginal atresia for which the above mentioned factors do not hold good cannot be etiologically classified at present, but it must be accepted that in the great majority of cases they also are congenital. Regarding the origin of hæmatosalpinx, Thomä again disagrees with Veit. According to the latter, the cause of hæmatosalpinx accompanying vaginal atresia is always some infection, usually the same one which causes the atresia. According to Thomä the absorptive power of the pelvic peritoneum is decreased by the collection of blood in the genital organs, the peritoneum being kept in a condition of chronic irritation by the repeated, intermittent entrance of menstrual blood, which leads to the formation of adhesions.

Infection by continuity from neighboring organs, by ascent, or by way of the blood or lymph-vessels is rarely a causative factor. **HEUCK.**

MISCELLANEOUS

Gizelt, A.: Chemical and Physiological Properties of Extracts from Organs, Determined by Experiments with Extracts from the Uterus, Ovaries, Placenta, and Fœtus (Über einige chemische und physiologische Eigenschaften der Organextrakte auf Grund von Versuchen über Extrakte von Uterus, Ovarium, Placenta, und Fœtus). *Arch. f. d. ges. Physiol.*, 1913, **clii**, 562.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

While normal blood coagulates after six to seven minutes, organic extracts from the uterus, placenta, and ovum bring about coagulation in a few seconds, even when they are obtained 24 hours after the death of the animal. The cause of this coagulation is thrombokinase, which, together with vasodilatin, is found in the juices of the organs. If the vasodilatin is removed by keeping the juices for a long time at room temperature or in the thermostat, the coagulation of the blood takes place more quickly. Extracts from the same organs prepared with hydrochloric acid show beyond question the presence of vasodilatin, as shown by experiments on dogs. By the use of methyl alcohol, vasodilatin can be obtained from extracts of the uterus, ovary, placenta, and fœtus. The toxicity of the organic extracts are shown in two ways. First, extensive coagulation of blood is caused by the action of thrombokinase and the lack of vasodilatin; and second, the vasodilatin causes death by reducing the blood pressure to zero through slowing of the circulation. **STOLZ.**

Crile, G. W.: Some Newer Methods of Reducing the Mortality of Operations on the Pelvic Organs. *J. Am. M. Ass.*, 1913, **lxi**, 1501.

By Surg., Gynec. & Obst.

The reclamation of a patient handicapped by hypertension or hypotension has been and is one of

the most cogent surgical problems. Mortality rates would be high were they based only on operations on patients with hypertension or hypotension, the result of infection or organic diseases. Crile believes that even these patients may be operated on successfully, not only without fatal end results but without the familiar train of disastrous sequelæ. If operations on handicapped patients can be postponed safely, the underlying causes of the hypertension or hypotension may often be successfully combated by physiological rest, diet, and special therapeutic measures, and the patient put in a condition in which operation may be safely attempted.

Our problem is, (1) to discover what may be the special risks when operations cannot be postponed, and (2) to evolve means by which these risks may be obviated or minimized. The natural sequelæ in hypertension cases are embolism, thrombosis, renal insufficiency, angina, pneumonia, and cardiac failure, due to psychic as well as physical strains. The seat of danger must therefore be found at the final point of meeting of both psychic and physical impressions — that is, in the brain tissue. If no traumatic impulse could reach the brain, and if all emotional stimuli connected with the operation could be removed or reduced to a minimum, then the dangers of operation would be only those which would result from the local injury inflicted. Brain-cell exhaustion and the disastrous effect of the presence in the body of increased amounts of energizing products of internal secretion would be prevented. This is brought about by Crile's method of anoci-association, which cuts off all nocuous or noci-associations from the brain. The procedure includes: (1) The lessening of the pre-operative psychic strain by the administration of solacing drugs; (2) the administration of a general inhalation anæsthetic to obviate harmful impressions during the course of the operation; (3) the progressive use of a local anæsthetic to prevent passage to the brain of traumatic stimuli from the field of operation; and (4) the use of a local anæsthetic of lasting effect that the tissues may be kept relaxed and that painful after-effects may be eliminated or minimized.

Patients with hypotension have brain cells already weakened by the anæmic condition. The definite and efficient remedy for the condition is direct transfusion of blood, which may be done several days before, just before, during, or immediately after the operation. Otherwise the technique is the same as for patients with hypertension.

The anæsthetic should receive more careful consideration. Crile does not use ether on account of certain disadvantages enumerated, but makes nitrous oxide the anæsthetic of choice because it is devoid of harmful after-results and serves as a measurable protection against shock.

The technique in abdominal operations follows: An hour or so before operation $\frac{1}{6}$ grain of morphine and $\frac{1}{150}$ gr. of scopolamine is given hypodermatically to produce solace and quiet. After the nitrous

oxide anæsthesia is completed, the division of tissues is preceded by nerve-blocking by means of infiltration with 1:400 solution of novocaine. Each division of tissue in the course of operation is preceded by the injection of the local anæsthetic. After incision of the peritoneum the latter is injected with a 0.5 per cent solution of quinine and urea hydrochloride. This infiltration minimizes post-operative wound pain and post-operative gas pain. In the absence of cancer or acute infections, the meso-appendix, the base of the gall-bladder, the uterus, the mesentery, and any portion of the peritoneum may be blocked with quinine and urea hydrochloride.

In performing a hysterectomy the broad and round ligaments are infiltrated with novocaine before division, and again before the wound is closed the stumps may be completely infiltrated with quinine and urea hydrochloride. Novocaine infiltration of stomach and intestines is not necessary on account of absence of noci-ceptors. The results are that no matter how extensive the operation, or how weak the patient, or what part is involved, if anoci technique is perfectly carried out the pulse-rate at the end of the operation is the same as at the beginning. The post-operative rise of temperature, the acceleration of the pulse, the pain, the nausea, the distention, are minimized or wholly prevented. In conclusion, the effect of anoci operation on the morbidity and mortality are given. In 729 abdominal sections a mortality of 1.7 per cent was found, and in 1000 operations including every risk in general surgical practice the mortality has been 0.8 per cent.

HENRY SCHMITZ.

Albeck: Deranged Function of the Female Bladder (Untersuchungen über der Funktion der weiblichen Urinblase). *Versamml. d. Nord. chir. Vereins*, Kopenh., 1913.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Albeck examined 250 gynecological patients as to the action of the bladder and also made bacteriological examination of the urine. In 130 of these patients, that is more than half of them, there was residual urine. Of the 120 without residual urine, 16 had bacteria in the urine; of the 130 with residual urine, 12 had pyuria, and 64 had bacteria in the urine. The influence of residual urine in urinary infection is, therefore, important. Residual urine is found very frequently in gynecological diseases. Defective function of the female bladder has heretofore been attributed to obstruction of the outlet, but Albeck shows that the explanation is generally to be found in the bladder itself, the obstruction being due to displacements caused by abnormal position of the genital organs; displacement by tumors; formation of adhesions between the bladder wall and the genitalia; or in atony of the bladder wall from senility; or on account of operations in which vessels or nerves were injured; or from hyperdistention of the bladder wall, which frequently occurs during the puerperium. S. A. GAMMELTOFT.

OBSTETRICS

PREGNANCY AND ITS COMPLICATIONS

Chaput: Extra-Uterine Pregnancy; the Importance of Violent and Repeated Pain; Supra-Uterine Hæmatocele (Contribution à l'étude de la grossesse extra-utérine. Importance des crises douloureuses violentes et répétées. L'hématocèle supra-utérine). *Revue de gynéc. et de chir. Abdom.*, 1913, xx, 545.
By Journal de Chirurgie.

Chaput reports two cases of ruptured extra-uterine pregnancy in which diagnosis was particularly difficult because of the absence of physical signs in the abdomen. In the first case there was no cessation of the menses, and the violence of the pains suggested perforation of the stomach. The softness of the cervix suggested pregnancy and threatened abortion. In the second case there were crises of violent pain and cessation of the menses.

As there were no signs of internal hæmorrhage or pelvic swelling, extra-uterine pregnancy did not at once suggest itself, and the diagnosis of uterine pregnancy with threatened abortion seemed most probable. Chaput arrived at the diagnosis of extra-uterine pregnancy from the fact that, after a considerable hæmorrhage, which would have been marked by the completion of the abortion if there had been uterine pregnancy, the pains continued without hæmorrhage, without fever and without opening of the cervix; moreover, in spite of a careful curettage the crises of violent pain reappeared.

The diagnosis of ruptured extra-uterine pregnancy may be made when there is no sign of hæmorrhage, hæmatocele or disturbance of the menstrual flow, if there are violent pains in the region of the ovary, appearing spasmodically with intervals of comfort, and returning stubbornly, no matter what treatment is used. He notes an anatomical peculiarity in the second case. The blood was encysted, forming a tumor the size of a fist, but it could not be felt through either vaginal fornix. It capped the body of the uterus, not being in contact with the pelvic walls at any point.

GEORGES LABEY.

Ferguson, R. T.: Extra-Uterine Full-Term Operation with Recovery. *J. So. Car. M. Ass.*, 1913, ix, 271.
By Surg., Gynec. & Obst.

The author reports a case in which he operated, with recovery, where an interstitial tubal pregnancy went to full term.

The patient was a colored woman, 20 years old, who had had four miscarriages. The family history was negative from the obstetrical standpoint and syphilis was denied. She was first seen at what appeared to be the ninth month of pregnancy.

Labor pains had begun and the temperature was 103°, pulse 130. She had felt fetal movements up to

the eighth month, but none after. On dilating the cervix the uterus was found to be empty.

The abdomen was opened and a macerated foetus removed. The placenta was attached to the fundus of the uterus. The left ovary was spread out over the sac, which was adherent to every viscus, liver, stomach, spleen, omentum, large and small intestine, and parietal peritoneum. After hysterectomy was done and the sac torn from its adhesions, the patient recovered.

EUGENE CARY.

Kastanajeff, G. M.: Extra-Uterine Pregnancy in the Gynecologic Department of the Obuchow Hospital in St. Petersburg (Graviditas extrauterina nach dem Material der gynækologischen Abteilung des Obuchowspitals in St. Petersburg). *Russk. Vrach.*, 1913, xii, 935.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The material consists of 717 cases from 1895 to 1910. According to age they are divided as follows: below 20 years, 20 cases; 20-30 years, 334 cases; 30-35 years, 240 cases; 36-40 years, 104 cases, and over 40 years, 17 cases. Among them there were 99 first pregnancies. Among the multiparæ, 192 had only been pregnant once, 122 twice, 111 three times, 59 four times, 58 five times, 36 six times, 17 7 times, 10 eight times, 8 nine times, 5 ten times, and 3 thirteen times.

The etiology is difficult to determine. In 45 cases the extra-uterine pregnancy occurred during the first year after a previous normal pregnancy; in 68 after one year; in 80 after two years; in 162 after three to five years; in 139 after six to ten years; in 64 after eleven to seventeen years; and in 2 after eighteen years.

In 585 cases (81 per cent) the pregnancy was of eight weeks' duration. Repeated extra-uterine pregnancy occurred in five cases. The number of cases on the right and left sides were about equal; of the 717 cases, 337 were operated upon, with an operative mortality of eight per cent. Laparotomy was performed 267 times and in 184 instances for acute diffuse hæmorrhage into the peritoneal cavity, (110 cases of tubal rupture and 74 cases of tubal abortion). Of these 184 cases, 11 were drained immediately and 17 additional cases three to seven days after the operation. Laparotomy was also performed in 41 cases in which the pregnancy was still going on and the hæmatoma becoming larger. Drainage was more frequently employed in these cases and convalescence was prolonged. In cases of complete encapsulation of the hæmatoma, operative interference was only resorted to if the conservative treatment was ineffective. In the latter group are 41 cases of laparotomy and 6 cases of vaginal

extirpation of the tube, with a mortality of 11.5 per cent, and 60 cases of evacuation of the hæmatoma through the posterior vaginal vault, with a mortality of 3 per cent. An unpleasant complication of simple drainage is post-operative hæmorrhage. In 4 cases a second laparotomy had to be performed for secondary hæmorrhage, in 2 immediately after evacuation of the hæmatoma and in 2 a week later.

BRAUDE.

Nagel, W.: Eclampsia (Über Eklampsie). *Berl. klin. Wchnschr.*, 1913, I, 1107.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In kidney disease during pregnancy Nagel recommends milk diet and diuresis as prophylactic measures. After the onset of eclampsia he advises the Stroganoff method of treatment, which he describes in detail. In 650 cases treated by this method he had a maternal mortality of only 8 per cent and a foetal mortality of 21 per cent.

HOFFMANN.

Schmidt, O.: A Contribution to the Study of Eclampsia, Based on Ninety-Eight Cases (Beitrag zur Eklampsiefrage auf Grund von 98 Fällen). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxiii, 414.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

At the gynecologic clinic in Bremen, from 1907 to 1910, the eclampsia treatment has consisted in immediate delivery, by which the author was able to reduce the previous mortality of 38.33 per cent from the expectant treatment to 23.53 per cent.

Since September, 1910, 38 cases have been treated exactly according to Stroganoff's method. Of these cases 10 died, or 26.31 per cent; of the 23 cases of spontaneous deliveries only 3, or 13.04 per cent, and of the 15 cases delivered by operative procedures 7, or 46.66 per cent. Among the latter was a case of very severe eclampsia delivered by cesarean section. Most of the cases treated by Schmidt had had one or more attacks of convulsions outside of the clinic. One had been unconscious all night and died in spite of the Stroganoff treatment and immediate delivery. Among the patients who recovered there were a number who were first cured of the attacks by the Stroganoff method and who, 3 to 17 days later, were delivered spontaneously without the attacks recurring.

The author is of the opinion that the Stroganoff method of treatment should always be carried out in a hospital, as only there can all details be strictly adhered to. In combination with Zweifel's venesection a still greater improvement in the results may be obtained. The author does not recognize weather as an etiological factor in eclampsia.

NEBESKY.

Rohrbach, W.: Statistics of One Hundred and Fifty-Eight Cases of Eclampsia; and Their Treatment (Statistik und Kritik über 158 Eklampsiefälle und deren Behandlung). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxiii, 613.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The report comprises the time from April 1, 1900, to December 1, 1912, with 11,005 labors. Eclampsia

occurred in 1 case in 70, or 1.43 per cent. One hundred and twenty-eight cases occurred in primiparæ, 11 in II-paræ and the remainder in III- and multiparæ. The disease occurred oftenest during the months of June and August, 22 cases each, and least often during December and February, 4 and 7 cases. The average age of the primiparæ was 22.6 years, of the II-paræ 23.3 years, and of the multiparæ 32 years. Fifty-five primiparæ were under 20 years old and 46 primiparæ under 25 years. The average age of the primiparæ is, therefore, not so high that a preference of the disease for old primiparæ could be deduced from it. Twin pregnancies occurred in 7 cases, 4.43 per cent; 3 of the twin cases died. The eclampsia appeared during pregnancy 38 times, during labor 84 times, and during the puerperium 36 times. From April 1, 1900, to April 1, 1906, 71 cases of eclampsia were observed, with 30 deaths, 42.25 per cent total mortality. Of the 57 eclamptic patients, 49 were delivered operatively, with a mortality of 23, 46.93 per cent. Vaginal cesarean section was done four times with three deaths, abdominal cesarean section five times with four deaths, forceps delivery 25 times with 10 deaths, version twice with one death, perforation 13 times with five deaths.

Preparatory measures consisted in the use of the Bossi dilator ten times, in the use of the metreurynter nine times, incision of the cervical os nine times. Seventy-two viable children were obtained, 6 of them being twins. The total mortality was 21, 21.16 per cent. Fifty children were delivered by surgical termination of the eclampsia during pregnancy with a death rate of 20, 40 per cent.

From 1906 to 1912, 87 cases of eclampsia occurred, with 14 deaths, 16.09 per cent. Of these 56 were delivered surgically, with 10 deaths, 17.85 per cent. Vaginal cesarean section was performed 22 times with six deaths, extraperitoneal cesarean section once with no death, forceps extraction 26 times with two deaths, version 5 times with one death. Preparatory steps were the use of the metreurynter 4 times, incision of the cervix 15 times. The viable children numbered 82 (four times twins), with 12 deaths, 14.63 per cent. Surgically delivered eclampsia during pregnancy gave 52 children with 10 deaths, 19.23 per cent. The maternal death rate decreased from 42.25 per cent to 16.09 per cent and the infant mortality from 29.16 per cent to 14.63 per cent, with immediate rapid delivery. The author confirms the opinion of Freund that the early and rapid emptying of the uterus influences favorably, not only the attacks, but also the termination of the disease. The quickest possible removal of the fetus and placenta should be the rule also if the child is dead. Stroganoff's treatment has not yet been adopted, nor Sellheim's breast amputation nor Zangemeister's trephining and removal of the uterus. A good functional result was obtained in two of the three cases of decapsulation of the kidneys. Hydrotherapy has been entirely abandoned. Chloral and morphine are used very freely. Chloroform narcosis has been entirely rejected. Oxygen inhalations may

be of value. Experiments with injections of the normal serum of pregnant women did not show any apparent success. The results with hirudin injections were variable. Venesection is often used. The author prefers removing 400-500 ccm. at one time rather than smaller amounts repeated at intervals.

HARM.

Landsberg, E.: Examination of Urine and Blood in Eclampsics, in Regard to the Distribution of Nitrogen Compounds and the Contents of Fibrinogen and Residual Nitrogenous Substances; a Contribution to the Question of the Importance of Hepatic Function and Quantity of Fibrinogen in Disturbances of Pregnancy (Untersuchungen von Harn und Blut bei Eklampsischen bezüglich der Verteilung der Stickstoffsubstanzen und des Gehaltes an Fibrinogen und Reststickstoff. Ein Beitrag zur Frage der Bedeutung der Leberfunktion und Fibrinogenmenge für die Schwangerschaftsstörungen). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxiii, 234.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In most eclampsics there is an irregular increase in the amount of ammonia and amino-acid nitrogen in the urine, while the urea is diminished. The acidity is increased to varying degrees. The differences in percentage of the nitrogen contents from the normal do not account for the very evident disturbance of the liver. They have no specific relation to the production of eclampsia and are only symptomatic. The increase in ammonia is the result of an increased formation of acid in the system. The amino-acids are usually, but not always, increased, a change to be attributed, in conjunction with other findings, to the diminution of oxygen and decomposition of albumin. Urea is diminished because ammonia is increased. To this must be added the fact that urea is excreted with difficulty by the damaged kidney. The increase in residual nitrogen frequently observed in the eclamptic is the result of the renal insufficiency usually found. The amount of fibrinogen is usually higher than in the healthy pregnant, parturient, or puerperal woman. An increase in fibrinogen also occurs under entirely normal conditions; this symptom, therefore, is only an accessory sign, which does not have any injurious effect.

HOLSTE.

Wegner, A.: Treatment of Eclampsia (Zur Behandlung der Eklampsie). *Med. Klin.*, Berl., 1913, ix, 1318.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author discusses the different methods of treatment for eclampsia: conservative; active by early delivery; Stroganoff's method with morphine and chloral, with avoidance of external irritation, and quick but not forcible delivery; and Zweifel's method of bleeding and conservative treatment. The choice of method depends on the very variable clinical picture and a prognosis is very difficult at first. The author believes in a compromise between overactive therapy and the extremely conservative treatment. He gives narcotics according to Stroganoff's principles, removes at least 500 ccm. of blood, and if possible delivers under anaesthesia. He reports 32 cases with 4 deaths. There were 19 deliveries by vaginal or abdominal caesarean section (2 deaths), 2 forceps deliveries, and one extraction of a breech presentation (death). In conclusion, he describes a case of eclampsia without convulsions, which was ascertained by post-mortem examination.

HERZOG.

Tourneau: The Treatment of Eclampsia (Die Behandlung der Eklampsie). *Fortschr. d. Med.*, 1913, xxxi, 673.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The surgical treatment of eclampsia must be considered as a thing of the past. It consisted in rapid delivery by major surgical operation. It has now been replaced by the expectant plan of treatment with the use of narcotics. Stroganoff's procedure is finding more recognition on account of its good results. However, Tourneau believes that blood letting must be added to make the treatment still more effective. He uses venesection in all eclamptic patients, even in those recently delivered, without waiting for the occurrence of further attacks. He withdraws 500 ccm. of blood at the first section. This is followed by Stroganoff's method of administration of morphine and chloral. He uses ether instead of chloroform for narcosis, to avoid any injury to the heart. This method also is preferable in private practice outside of a hospital and prevents the loss of time necessary for the transportation of the patient to the hospital. BAYER.

Fenton, F.: Report of a Series of Abdominal Caesarean Sections. *Canad. M. Ass. J.*, 1913, iii, 835.

By Surg., Gynec. & Obst.

This is a concise report of a series of twenty-six consecutive operations done by the author during the past four years. Sixteen were done for contracted pelvis, six for ante-partum haemorrhage with undilated os, and one each for eclampsia, large baby, and stenosis of the vagina. Five were second operations on the same patients. All the children were delivered alive, but three died in a few days from prematurity. One mother died, but it might fairly be claimed that her death was not due to operation.

All the cases were done before rupture of the membranes or before any attempts at vaginal delivery or more than two vaginal examinations had been made, and these latter under strict precautions. All operations but one were done in hospitals.

The same technique was followed throughout the series and was, in its essentials, the same as is commonly used in the United States and Canada. The incision was four inches or less, longitudinal, with its center about an inch to the right of the umbilicus. No attempt at haemostasis was made until the child, placenta, and membranes were removed. Then the assistant immediately applied his palms firmly to the sides of the uterus and everted the cut-surfaces.

This manœuvre stopped the bleeding, obliterated the uterine cavity until firm contractions had set in, and also rendered easy the introduction of sutures. In the later cases pituitrin was used with good effect immediately after extraction of the baby. Three tiers of sutures of chromic gut were used in closing the uterus. The author does not rupture the membranes before opening the uterus nor as a rule does he dilate the cervix.

Patients were on full diet by the fourth day, stitches out the eighth or ninth, and patients out of bed by the twelfth.

Fenton says of the pelvimeter: "I am using it mainly as a means of detecting those cases which may have deformed pelvis. As soon as one commences to lay down definite rules for procedure based on any diameter, then the pelvimeter's usefulness is in a fair way to be lost. By far the best internal pelvimeter is the head of the child that has to pass through that pelvis. If the head will pass through, what difference what contraction exists? If it cannot do so without serious injury, the most convincing demonstration that the pelvis is ample for an average child will not assist very much in the delivery. In a badly deformed pelvis it is a simple matter to decide upon a course of action, but in the slightly contracted cases it is not so easy. The woman's previous obstetric history is a very important factor, but even here, and in all primiparæ in this class, I always feel that labor should be given a fair trial."

The author is sure that ante-partum hæmorrhage offers a field for cesarean section. He says: "Given a primipara near term, with placenta prævia, not in labor, cervix not readily dilatable, the mother's risk can be greatly reduced and the baby's life all but guaranteed by section, whereas by other procedures the chances for the child are small and dangers to the mother very considerable."

E. A. BULLARD.

Rachmanoff, A. N.: Thirty Cases of Classical Cæsarean Section (30 Fälle von klassischem Kaiserschnitt). *Med. Rundschau*, 1913, xl, 942.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Among 25,000 labors between 1907 and 1912 there were 30 cases of classical cæsarean section. Only 7 of these cases came to the clinic before labor commenced, the remaining 23 cases usually only a few hours before the operation was performed. Only 5 of these women were not examined vaginally. In none of the cases was there sufficient time for a bath and an enema. Two cases which entered with sepsis had been examined internally a number of times before admission and in bad surroundings. In these cases the liquor had escaped; in two others its presence was doubtful. Among the 30 cases, there were 11 primiparæ and 19 multiparæ. Of the mothers 28 remained alive and all the children lived. Only in two cases was there any fever after the operation. In 28 cases resection of the tubes was performed upon the request of the mothers.

The author deems it advisable to perform the tubal resection about 2 cm. away from the uterus, as by this method hæmatomas are prevented. The uterus and the abdomen were closed with silk, which was removed on the eighth day. A rise of temperature to 38° C. with intact membranes is no contra-indication to the operation. For neglected cases perforation of the child alone is feasible.

KRINSKI.

Kayser: Classical and Extraperitoneal Cæsarean Section Compared (Der Kaiserschnitt in Wandel der Zeiten). *Fortschr. d. Med.*, 1913, xxxi, 813.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The extraperitoneal cæsarean section is discussed in detail, the changed technique and indications for the new method being especially dwelt on. In a comparison between the classical and extraperitoneal operations it is evident that the latter method has a number of advantages and also some disadvantages. Among the latter are the impossibility of performing sterilization, which may be urgently necessary, and the possibility of producing an infection of the pelvic connective tissue, in which condition prognosis is difficult. Moreover, the extraperitoneal method endangers the life of the child on account of the difficulty of either manual or forceps extraction. In résumé, the author concludes from the short history of the extraperitoneal method that the procedure has not fulfilled what was expected of it. Nevertheless these modern procedures, even though not adapted to the private home, are distinct advances in our therapeutic measures, especially after the technique has been perfected, and above all when further bacteriologic research has cleared up dangers of infection.

WEBER.

Hirst, B. C.: The Modern Extraperitoneal Cæsarean Section; with a Description of the Best Technique for Its Performance. *Surg., Gynec. & Obst.*, 1913, xvii, 504. By Surg., Gynec. & Obst.

Of the sixteen different techniques for extraperitoneal cæsarean section, the author prefers that of Veit and Fromme with an original modification which consists in sewing the peritoneal flaps together before opening the uterus. The uterine wound is sewed with a running catgut stitch and the peritoneal flaps brought over it. Nine operations are reported without maternal or foetal mortality.

Tuszkai: Indications for Abortion in Hyperemesis and Heart Disease (Über Indikationen zur Unterbrechung der Schwangerschaft bei Hyperemesis und Herzkrankheiten). *Tr. Internat. Med. Cong.*, Lond., 1913, Aug.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Abortion has often been done for persistent vomiting due to hysteria which would have yielded to suitable treatment by suggestion. Other cases are merely symptoms of other diseases such as gastritis, peritonitis, etc., for which appropriate treatment should be given. Genuine hyperemesis gravidarum

is due to irritation of the peritoneum and can be overcome only by abortion. If all other causes for the vomiting can be excluded, if hot and cold vaginal applications and long continued fasting have no effect; if there is rapid loss of weight, increase in specific gravity of the urine, and albumin and kidney elements can be demonstrated in the urine, then large doses of opium should be given (10 to 15 cgm. per day); and if this fails, abortion should be performed at once. As to the indications for abortion in heart diseases, Tuszkai bases his treatment on the observations of three or four cases. On account of the normal hypertrophy of the heart in the first few months of pregnancy the physiological change in the rapidity of the pulse in the prone position ceases. The reappearance of this variability in the pulse during the course of pregnancy is a sign of beginning failure of compensation and must always be taken into consideration in considering the indications for premature delivery.

Lindemann, W.: The Types of Infection in Criminal Abortion; Their Origin and Treatment (Zum Infektionsbild bei Abortus criminalis; dessen Genese und Therapie). *Beitr. z. klin. d. Infektionskrankh. u. z. Immunitätsforsch.*, 1913, i, 447.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author estimates the number of criminal abortions in Halle at 90 per cent of the total number of abortions. The continued decrease in the number of births is chiefly caused by committing abortions. The usual means used for this purpose are douches, uterine syringes with long points, and intra-uterine pessaries. He reports the different forms of infections found and those which could be demonstrated in the blood. The bacteria are the staphylococcus pyogenes aureus hæmolyticus, the staphylococcus albus, the streptococcus an hæmolyticus, and Fränkel's gas bacillus. He describes the bacteriological examination of several cases and finally concludes that Fränkel's gas bacillus may be present in the blood during the severest as well as the mildest puerperal infections, and it therefore should receive more attention. For the purpose of culture, the author recommends his cylindrical plate method. He advises early emptying of the uterus, eventually, if necessary extirpation of the uterus with a high ligation of the veins to prevent the progress of the infection through these channels.

BURGER.

Scherer, A.: Bacteriological Examination in the Treatment of Abortion (Kann die bakteriologische Untersuchung für die Behandlung des Abortus richtungsbendend sein). *Pest. med. chir. Presse*, 1913, xlix, 261.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Scherer is opposed to the suggestion of Winter to examine bacteriologically the discharges of all infected and febrile abortion cases and to omit all active treatment if hæmolytic streptococci are present. He examined bacteriologically 60 cases of

normal abortions without fever. All were treated actively and recovered uneventfully, although the streptococcus hæmolyticus was grown in 14 per cent of them. In septic abortions he found the streptococcus hæmolyticus in 25 per cent.

It is impossible, therefore, to base the indications for treatment upon the results of bacteriological examination. Other factors also refute Winter's idea. Hæmorrhage frequently compels the attending physician to interfere immediately. The bacteriologic examination prolongs the treatment two to three days, which is also of economic importance. The taking of cultures is difficult for the active practitioner, and the delay incident thereto may reduce the bactericidal power of the patient from the constant absorption of the putrefying uterine contents. This may permit non-virulent germs to become virulent and dangerous. Cultivation of the organisms in the blood, and especially the anerobic cultures of Schottmüller, may be of value in deciding the treatment of some cases, but can only be carried out in the hospital, and is useless at present for the general practitioner.

BISCHOFF.

Lepage: Treatment of Post-Abortion Affections (Behandlung der Post-abortion Erkrankungen). *Tr. Internat. Med. Cong.*, Lond., 1913, Aug.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Lepage has drawn the following from the observations of 370 cases from the gynecological clinic of Boucicaut. In treating abortion in the early months we must take into consideration whether it has been spontaneous or criminally induced. The prognosis of spontaneous abortion is good if it was not caused by an acute febrile disease. If there is no fever or hæmorrhage the treatment should be purely expectant. If an attempt at criminal abortion is suspected the delivery of the fœtus embryo must be hastened by the administration of quinine sulfate 1.0 gm. per day. If this is not sufficient and fever or hæmorrhage sets in the uterus must be emptied either digitally or by curettage controlled by the finger. In fever after abortion, frequent irrigation of the uterus and drainage should be used. If the adnexa or peritoneum are involved, curettage should be performed immediately. In case of suppuration in Douglas' pouch colpotomy should be done in peritonitis, and drainage inserted. Very rarely are there indications for vaginal or abdominal hysterectomy. Local treatment is generally sufficient if it is begun in time.

Heinrichsdorff, P.: The Relation of Hyperemesis Gravidarum to Acute Yellow Atrophy of the Liver; and Other Post-Mortem Findings (Die Beziehungen der Hyperemesis gravidarum zur akuten gelben Leberatrophie und sonstigen Sektionsbefunden). *Arch. f. Gynäk.*, 1913, xcix, 555.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Since some cases of hyperemesis gravidarum have ended fatally some investigators have concluded that they were due to an intoxication similar to that of

eclampsia, and Williams recognizes reflex, neurotic, and toxic forms. On the other hand, Winter claims that there is but one type of hyperemesis. This begins as a reflex neurosis, and only under certain conditions takes on the picture of an intoxication.

The author attempts to decide whether Williams' or Winter's view is more nearly correct. Hyperemesis is a continuous type of vomiting that lasts for weeks or even months, and is accompanied by emaciation and weakness without organic cause. If to the above clinical picture are added icterus, delirium, restlessness, nephritis, etc., we are dealing with an entirely different disease, acute yellow atrophy of the liver. The latter occurs in men, women, and children; the former only in pregnant women. The author had a case that showed at autopsy fatty degeneration of the liver, icterus, and atrophy. The meshwork of the liver failed to show the typical softening so characteristic of acute yellow atrophy. Yellow degenerated foci only were found, none of the red areas in advanced yellow atrophy being present.

The relation of hyperemesis gravidarum to acute yellow atrophy of the liver should be thus interpreted: hyperemesis is present and acute yellow atrophy develops, subsequently, the body being too weak to withstand very long, and yielding before the atrophic changes have become very far advanced. Both of the diseases are the result of an intoxication, for inanition could never bring about such degenerative changes without atrophy, nor could it produce the acetone bodies.

Most of the cases of hyperemesis that end fatally are the result of an intoxication. Hyperemesis and eclampsia are seldom associated with each other, for the former occurs early and the latter late in pregnancy. All cases of hyperemesis that develop symptoms of toxicosis do so after the clinical picture of simple hyperemesis is present, and autopsy shows that such cases did not begin as a toxicosis, but ended as such. In other words, Winter's theory is the more plausible.

WETZEL.

Recasens, S.: Modern Conception of the Intoxications of Pregnancy (Moderne Auffassung der Schwangerschafts-Intoxikation). *Rev. valenc. de cienc. mèd.*, 1913, xv, 157.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Disturbances do not occur in pregnancy as long as a balance is preserved between the products of the ovum and the maternal organism. A disturbance of this balance causes those conditions in the early months of pregnancy which are considered as probable signs on account of the frequency of their occurrence. These functional disturbances in the beginning of pregnancy are radically different from the pathologic processes during the last months. The former are signs of immunity, the latter, on the contrary, true toxæmias. The signs of immunity arise from the entrance of albuminoid substances originating in the ovum into the maternal organism, with a subsequent formation of antibodies; these activate the function of already existing organs such

as the breasts, the thyroid glands, parathyroids, adrenals, hypophysis, etc., or temporary structures such as the corpus luteum. These signs of immunity during the early months may go on into toxæmias, if injuries to cell structure are added to the activity of the albumin products derived from the ovum, producing hyperemesis, pernicious anæmia, etc. The toxæmia occurring during the latter months of pregnancy arises from a combination of autogenous and heterogenous factors which markedly reduce the power of resistance. The "heterogenous" poisons are formed principally in the intestinal canal. These albuminous products enter the blood stream and produce injuries to cells, "hystolysis," in the liver tissue, and the endothelium of the vessels. Thus ferments arise from the rapid cell destruction, causing coagulation. The obstructing coagula formed in this manner give rise to necrotic processes in the eclamptic liver. The "autogenous" poisons come from many organs, as detached liver cells, products normally excreted by the kidneys, sweat glands, etc., or products of foetal metabolism. The toxæmia of pregnancy is not the result of a specific toxic agent. The success of the prophylactic dietetic treatment supports the theory of the intestinal origin of the eclamptic poison. The result of the treatment with the serum of pregnant women in toxæmia is based on the fact that the protective substances of the body during the last months of pregnancy are diminished, and also explains the grave course of general toxic or septic disease in puerperæ.

SCHMID.

Scipiades, E.: Myoma and Pregnancy (Myom und Schwangerschaft). *Abhandl. a. d. Geb. d. Geburtsh. u. Gynäk.*, 1913, ii, 201.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

On the basis of 67 cases, the author discusses myomas in relation to pregnancy, labor, and the puerperium. In regard to pregnancy and myomas, the author comes to the conclusion that only a small percentage of the women remain free of all symptoms; 34.07 per cent complain of pain, 29.67 per cent have changes in shape of the abdomen, and 28.5 per cent have mechanical symptoms, such as difficulty in urination and defecation, dyspnœa, etc. Enlargement or softening of the fibroid during pregnancy is not the rule. Change in position of the myoma occurs in tumors of the body and also of the cervix. The congestion of pregnancy frequently causes pathologic changes in the tumor.

Myomas accompany extra-uterine pregnancy in 2½ per cent of the cases and are undoubtedly the cause of the extra-uterine pregnancy in ½ per cent of the cases. Placenta prævia accompanies fibroids in 6 per cent of cases, and hæmorrhages in 14 to 16 per cent. The rare pedicled form of tumor leads to serious complications (torsion and kinking of the pedicle); further dangers accompany the incarceration of the tumor in the pelvis, and not rarely peritoneal disturbances occur. In regard to the diagnosis, it is most difficult in the

early part of pregnancy; the larger the tumor the more the cervix is distorted and displaced by the tumor. Advantage should be taken of rectal examination and examination under narcosis. The diagnosis of pregnancy is not so urgent as that of the tumor. In only two-thirds of the cases can a positive diagnosis of the tumor be made; it is easily mistaken for other tumors, for extra-uterine pregnancy, for uterus bicornis and for twin pregnancy. In regard to prognosis it is doubtful whether pregnancy may go to term, as in 30 to 33 per cent of the cases operative interference is indicated, which frequently leads to interruption of the pregnancy. Hardly more than half of the cases go to term. Artificial interruption of the pregnancy should not be adopted as a therapeutic measure, as its continuance frequently has a beneficial effect on the tumor, and both abortion and premature delivery are dangerous. Abdominal myotomy during pregnancy is also dangerous. The best operation is supravaginal amputation. Total extirpation is only indicated if the vagina must be opened for drainage or for other reasons.

The diagnosis of the position of the child is difficult and frequently the position is abnormal. Labor is usually prolonged; the first stage, especially, is prolonged in incarcerated or cervical tumors, in breech cases, and in transverse positions. Early rupture of the membranes occurs in nearly three-fourths of the cases. The second stage need not be prolonged, but it is frequently very painful. The third stage of labor is abnormal in 21 per cent more of these cases than of non-tumor cases, Cr  d   expression and manual removal being frequently necessary. In submucous tumors the third stage of labor is always interfered with. The most dangerous disturbances are the frequent h  morrhages. The influence of the pregnancy upon the tumor may manifest itself in three different ways: in a softening and later flattening out of the tumor, in its rising out of the pelvis, and in its being delivered (rarely). The prognosis for births complicated by myomas is difficult to determine. It is certain, however, that operative interference is often necessary, not only obstetrical but also general surgical operations. Women with myomas of the uterus should, therefore, be sent to the hospital. All obstetrical and gynecological operations, from simple reposition to total extirpation, may at times be necessary. During the puerperium as well as in the treatment instituted for the myomatous uterus, asepsis is the most important point. The treatment of the puerperium is mostly symptomatic and is operative only if the myoma is the source or cause of a severe puerperal disease.

TORGGLER.

Neumann, H.: Diabetes of Pregnancy (Schwangerschaftsdiabetes). *Ztschr. f.   rztl. Fortbild.*, 1913, x, 367.

By Zentralbl. f. d. ges. Gyn  k. u. Geburtsh. s. d. Grenzgeb.

Diabetes of pregnancy, in contradistinction to pregnancy in a diabetic patient, is a diabetes induced by the pregnancy in a previously healthy individual.

The course of the two may be identical and deserves careful watching. The excretion of small amounts of levulose, lactose, and pentose is of no significance. The etiology of diabetes during pregnancy is not clear as yet, various theories having been promulgated and discarded. The rational treatment consists in placing the patient on a suitable diet early, which has resulted in reducing the mortality of mother and child from 50 or 60 per cent to practically nothing. The disease makes its appearance about the second to the fourth month. During the last three months acetone, diacetic acid, and oxybutyric acid are frequently excreted, and shortly before delivery albumin, also, which points to an involvement of the kidneys or of the hypophysis.

Acidosis, especially in mild cases, is not a serious symptom, the pregnant being predisposed to ketonuria, and even a severe degree of acidosis will not always cause coma. An increased excretion of acetone has frequently been observed during the first few months of pregnancy and a gradual recession of the same if the patient was placed on a suitable diet. Hydramnion, abortion, and premature labor can be prevented by careful living. The puerperium usually is normal, and the acetone disappears from the urine within a few days. The children are healthy and usually of good weight. Primary diabetic patients may become worse during pregnancy, but after delivery may return to their normal condition, those with an hereditary taint recovering entirely although they are predisposed on account of the susceptibility of the nervous system. There is therefore no indication to interrupt a pregnancy on account of diabetes, but a diabetic patient should be warned before she is permitted to enter the marital state and before conception occurs.

EHRENBERG.

Stutz, G.: Tuberculosis and Pregnancy; Sterilization (Beitrag zum Thema: Tuberkulose und Gravidit  t; Sterilisation). *Ztschr. f. Geburtsh. u. Gyn  k.*, 1913, lxxiii, 397.

By Zentralbl. f. d. ges. Gyn  k. u. Geburtsh. s. d. Grenzgeb.

The author considers that the accusation that physicians are influencing the number of births unfavorably by recommending means of preventing conception and means of sterilization is not justified. The former accusation applies to newspapers and agents.

The number of therapeutic abortions and sterilizations performed is small. Usually these mothers have performed their duty toward the community and their health is necessary for the welfare of their children. Children of tuberculous mothers are constitutional weaklings. The indications for performing a therapeutic abortion and sterilization should be determined by the family physician. In young women with no children or only a few, the author interrupts pregnancy only in the hope of curing the tuberculous patient. In advanced cases with many children the author proposes sterilization, to be performed vaginally if possible.

MOHR.

Balaban, I. A.: Treatment of Syphilis in the Pregnant Woman (Zur Syphilistherapie bei Schwangeren). *Arb. a. d. geburt.-gynäk. Klin. Prof. Redlich*, St. Petersburg., 1913, 1, 55.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

According to the latest researches the mother of a syphilitic foetus must be diseased or have been diseased. The treatment of the pregnant woman shows good results. In one case of habitual abortion, and in another patient who had several times delivered macerated infants, no signs of lues existed and the Wassermann was negative. The author treated these women during their last pregnancy with mercury and potassium iodide. Both were delivered of healthy children. A third case was treated with salvarsan. She was a IX-para, 25 years old, whose last 6 pregnancies terminated during the seventh to eighth month with macerated babes. She was in the beginning of pregnancy and had secondary syphilis with a positive Wassermann. Salvarsan, 0.45, was injected, subcutaneously and after two months another subcutaneous injection of 0.5 salvarsan was given. The Wassermann reaction was negative at the end of pregnancy and a perfectly healthy child was born. A Wassermann made later on the child was negative. BRAUDE.

Pankow: The Frequency and Diagnosis of Cardiac Defects During Pregnancy (Häufigkeit und Bewertung der Herzfehler in Gravidität). *Deutsche Gesellsch. f. Gynäk.*, Halle, 1913, May.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

From material of 5000 maternity cases, Pankow investigated cardiac defects during pregnancy. It was found that 49.2 per cent of all women had accidental murmurs and that 2.8 per cent of all women had actual cardiac defects. The diagnosis of accidental murmurs is frequently difficult. The following two points are of interest in the diagnosis:

1. In almost all pregnant women an enlargement of the heart to the left exists, even in those without cardiac murmurs; but an enlargement to the right can be demonstrated only in those with actual cardiac defects.

2. In actual cardiac defect the murmur is different from the accidental murmur. In the accidental murmurs the first tone is clear, followed by a short pause and then the murmur. In actual cardiac defect the first tone is partly overlapped and followed by the murmur, which also takes up a good part of the systole. The accidental murmurs mostly are soft blowing murmurs, although definite loud murmurs do occur and an accentuation of the second pulmonary tone is not uncommon. They probably originate in the pulmonary artery and are heard most distinctly in the third left intercostal space or over the third rib near the sternum.

In regard to the artificial interruption of pregnancy, and its indications, the following may be said:

1. If in a pregnant woman suffering from cardiac disease no symptoms of cardiac incompetence appear during the pregnancy, it is not justifiable to interrupt

the pregnancy, as complications in all probability will not occur during labor.

2. If, however, symptoms of failure of compensation appear during the first half of pregnancy, it is clear that the reserve force of the heart is exhausted and pregnancy should be interrupted, as the increased amount of work thrown upon the heart in the latter months of pregnancy may lead to a sudden collapse of the heart.

3. If symptoms of failing compensation make their appearance only toward the end of pregnancy and the lesion is a mitral stenosis with marked signs of myocardial degeneration, the pregnancy should be interrupted. In cases of mitral incompetence expectant treatment may be used, as all signs of insufficiency may disappear under appropriate treatment. If, however, the signs of failing compensation persist in spite of treatment, or if they return immediately after the cessation of treatment, it is advisable to interrupt the pregnancy, and this is best done by vaginal section. The frequent occurrence of stenosis and insufficiency combined may render the prognosis extremely difficult, but it must be based principally upon the degree of stenosis and the condition of the cardiac muscle.

4. If the symptoms of failing compensation make their appearance only at the beginning of labor, it is advisable to wait for delivery to be completed or do an extraction when conditions demand it. If the labor is evidently to be a prolonged one and the failure of compensation is extreme, operative delivery may be resorted to.

Mayer, A.: The Relations of Colon Pyelitis to Gestation (Die Beziehungen der Koli Pyelitis zur Fortpflanzungstätigkeit). *München. med. Wchnschr.*, 1913, 1x, 1479.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author takes the stand that pregnancy is not the actual cause of the pyelitis but only a predisposing factor. According to his view there is an ascending and a descending method of infection, the latter being the more common. Frequently colon bacilli migrate to the pelvis of the kidney in functional disturbances of the bowel (appendicitis, stomach diseases, etc.) by way of the lymph stream. In cases of pyelitis during pregnancy, premature labor is more common and the children are poorly developed. The symptoms usually recede during the puerperium. On account of the danger of ascending infection, internal examinations should not be made during labor except for urgent indications. In differential diagnosis, appendicitis, peritonitis, puerperal infection, acute respiratory diseases, and uterine hæmorrhage must be considered. WEISSWANGE.

Schlayer: Pregnancy and Diseases of the Kidneys (Schwangerschaft und Nierenleiden). *Monatschr. f. Geburtsh. u. Gynäk.*, 1913, xxxviii, 27.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

As genuine nephritis cannot always be distinguished from the kidney of pregnancy, Schlayer pro-

poses to let the indication for induction of premature labor rest on the result of the functional tests of the kidneys. If general systemic symptoms, as uræmia, appear as the result of the damage to the kidney, labor must be induced, even prematurely. In cardiac hypertension and hypertrophy, however, this should be required only during the first three months of pregnancy, and in the last months only when complications such as retinal changes, uræmia, etc., appear. Gestation should also be interrupted in nephritic œdema only when other symptoms of a general nature complicate the disease or the œdema does not disappear under dietetic measures. Another aid in judging the condition of the kidney is by the excretion of urine, the qualitative determination being far more important than the quantitative. This is obtained by the kidney "test-meal," consisting of coffee with milk, bread, and sugar mornings and afternoons; milk for the second breakfast; clear soup, mashed potatoes, and beefsteak for lunch; followed by a cup of coffee and gruel for supper. The urine is collected every two hours and its quantity, specific gravity, and sodium chloride content are determined. The normal urine shows great deviations in amount, percentage of sodium chloride, etc., depending on the ingestion of liquids with the different meals. In the nephritic patient such deviations are not encountered, the findings being constant and fixed, because the reaction following the ingestion of liquids with the meals is markedly delayed on account of the diseased condition of the kidneys. The nephritis of pregnancy tends to continue after pregnancy, even when the albumin disappears. As long as the kidney excretions are not normal the patient should not be considered cured and should not become pregnant.

WIENER.

LABOR AND ITS COMPLICATIONS

Christiani, A.: The Use of the Metreurynter in Labor Complicated by Myoma (Hystereuryse bei Myom unter der Geburt). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxiii, 390.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Christiani recommends the use of the metreurynter in cases in which a spontaneous labor cannot be expected on account of an obstruction of the true pelvis by a myoma, resulting in weak labor pains. The metreurynter acts, first, as a physiological stimulant to labor pains; secondly, in proper cases it may hold back the tumor; and third, after some hours it enables the obstetrician to make an exact examination to determine whether a living child can be born, whether he must perforate and extract the dead foetus, or whether he is compelled to interfere surgically.

EHRENBERG.

Souttar, H. S.: Calcified Ovarian Fibroma Obstructing Labor. *Proc. Roy. Soc. Med.*, 1913, vi, Obst. & Gynec. Sect., 335. By Surg., Gynec. & Obst.

The author reports a case in which a calcified ovarian fibroma impacted in the pelvis obstructed

labor. The patient was delivered by cæsarean section and four months later the tumor was removed.

Macroscopical examination showed an oblong tumor partially covered by peritoneum, measuring 18 cm. by 9.5 cm. by 9.5 cm. A normal ovary and a portion of a tube with mesosalpinx was attached to one convexity. The peritoneal surface was covered with small calcareous plates. The tumor was sectioned with a hand-saw. The cut surface was homogeneous. It had a groundwork of white œdematous-looking fibrous tissue in which innumerable calcareous nodules were embedded. The center of the tumor showed the most fibrous tissue. The weight of the specimen was 4 lb. 8 oz.

The microscopic examination showed interlacing bundles and masses of thick, tortuous collagen fibers with sparsely scattered spindle-cells between the fibers.

There are no similar cases, so far as the author can discover, in the literature. C. H. DAVIS.

Sievert, C.: Rules for Disinfection During Labor, and for the Treatment of Post-Partum Hæmorrhage; with a Report of 42 Cases of Manual Detachment of the Placenta (Lehren für die Desinfektion in der Geburtshilfe und für die Behandlung der Nachgeburtsblutungen an der Hand von 42 manuellen Placentalösungen). *Deutsche med. Wchnschr.*, 1913, xxxix, 1100.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The following antisepsis is recommended for obstetrical cases: Trimming of pubic hair, soaping of the external genitalia, cleansing with a 1 per cent soap solution of cresol, irrigation with a 1:3000 acid solution of bichloride of mercury. Vaginal irrigation with solution of the acetotartrate of aluminum is used only in suspicious cases. Rubber gloves are worn only during operations lasting for hours.

In forty-two cases in which a manual detachment of the placenta was necessary, 2 deaths occurred—one on the sixth day of the puerperium from embolism after an attempt at version, and one from sepsis, but the patient had a high fever when admitted to the clinic. An absolutely afebrile puerperium was attained in 60 per cent. Not a single woman died from hæmorrhage amongst 5000 labors. The amount of blood lost is measured, also the height and width of the fundus of the uterus. If only 100 gm. of blood are expelled into the tray, the aorta is compressed for from 10 to 15 minutes by Rissmann's compressor. This instrument is so harmless that it should be included in the outfit for midwives.

KREBS.

Ponfick, W.: The Results of Artificial Premature Labor in Moderately Contracted Pelves (Die Erfolge der künstlichen Frühgeburt beim engen Becken mittleren Grades). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxiii, 452.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Among 2100 cases of labor there were 42 cases of contracted pelvis with a true conjugate of not less

than 9 cm. Ponfick never employs premature labor in primiparæ but lets the case end spontaneously. During the last six weeks Prochorowik's diet is prescribed. The membranes are kept unruptured as long as possible. No internal examinations are made during labor, and if an exploration is necessary it is made through the rectum. Morphine is administered liberally, as Ponfick has observed good effects upon the pains. The use of pantopon and scopolamine has been discontinued, as they prolong the labor. Sacral anæsthesia has also been discontinued, as its use is too uncertain. The spontaneous entrance of the head into the pelvis is aided by Walcher's position, by the delivery chair, and by walking around. As soon as the head enters the pelvis, extraction with forceps is performed. If no progress has been made several hours after rupture of the membranes, if the foetal heart sounds decrease, or if the mother's condition demands interference, expression is attempted under anæsthesia, and eventually version with episiotomy or high forceps with perforation. The result of fourteen trial deliveries of this kind was eleven live children, five spontaneous labors, four forceps deliveries, and two versions. Artificial premature labor is induced with a metreurynter between the thirty-sixth and thirty-ninth week. If after the rupture of the bag the head does not enter the pelvis, immediate version and extraction are performed under anæsthesia, or expression in the Walcher position. In this manner, fifteen women were delivered. Eleven live children were born, nine of whom were discharged living. Of the six dead children, three died of asphyxia during extraction as a result of stricture of the os. Of the mothers, only one had fever, which reached 39.9° on four different occasions but ended in recovery. Of the nine children discharged, eight lived.

HÜFFEL.

Müller, A.: Shape of Head and Mechanism of Birth (Über Kopfform und Geburtsmechanismus). *Monatsschr. f. Geburtsh. u. Gynäk.*, 1913, xxxviii, 142. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author desires a simpler classification and nomenclature for the presentations, especially the head presentations, for the sake of a better understanding of the relationship of the parts in the different head presentations. Not only does the practical consideration of the difficulty for the student demand a simpler classification, but it is needed on purely scientific grounds. He suggests a scheme of classification based on mechanical principles, according to which the designation of the presentation is to be from the lowest point of the head, the sub-classification to be determined by the direction of the back. There are 5 head presentations: (1) Posito occipitalis—occipital position; (2) posito verticalis—parietal position; 3. Posito sincipitalis—frontal position; (4) posito frontalis—brow presentation; (5) posito facialis—face presentation. In each of these 5 presentations there is a dorso-anterior and a dorso-posterior posi-

tion. Here there are 2, 4, 6 or 8 possibilities: Back, laterally forward or laterally backward; dorso-anterior and dorso-posterior, right and left; transverse position, right and left, and posterior and anterior primary straight position; pubic dorso-anterior position and sacral dorso-posterior position. This simple scheme gives 40 presentations. If we consider only complete positions throughout labor, there are only two, the dorso-anterior and dorso-posterior, making only 10 presentations.

All these forms are observed in practice and must therefore be recognized scientifically. He tries to answer the objection that from the standpoint of teaching it is impossible to consider the rare presentations. He holds that these are the very ones that are important for the practitioner to recognize, and that therefore they should at least be mentioned in the text-books. The comparative study of the mechanism of birth in the different head presentations is very important scientifically and practically.

EISENBACH.

Jardine, R.: The Retraction Ring as a Cause of Obstruction in Labor. *Lancet*, Lond., 1913, clxxxv, 998. By Surg., Gynec. & Obst.

The author reports a case in which the lower uterine segment was ruptured in an attempt to perform version in the presence of a retraction ring. He reports two cases where the retraction ring formed in front of the presenting head. Both of these were treated by cesarean section with happy results. When the contraction ring is well formed it cannot be dilated manually, and the author believes that in such a case cesarean section is indicated, whether the pelvis be contracted or normal.

Jardine also reports two cases where the retraction ring formed above the presenting head. In each case the child was delivered only after a destructive operation. Both mothers recovered, but one developed a pelvic abscess. He believes that where the child is in good condition cesarean section is indicated for this type of case.

He mentions a patient in whom a retraction ring formed with breech presentation. Both mother and child were saved. He believes that retraction ring is a more common complication of labor than is generally supposed.

C. H. DAVIS.

Basset, R.: The Importance of Early Rupture of the Membranes for Labor and the Puerperium (Über die Bedeutung des frühzeitigen Blasen-sprunges für Geburt und Wochenbett). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxiii, 566. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

A total of 4141 labors were investigated, in 500 of which the sac ruptured when the dilatation of the cervix was from two to three inches. The rupture occurred shortly before or immediately after vaginal examination which determined the degree of dilatation. The results observed are as follows: A shortening of the duration of labor did not occur.

The greater number of the primiparæ were delivered after two to three hours and the greater number of multiparæ after fifteen minutes. The longest duration of labor in a primipara was thirty-eight hours, due to podalic presentation and extreme rigidity of the external os uteri. In three multiparæ the duration of labor was twenty-four hours as a result of weak pains or continuous contraction. Young primiparæ and old multiparæ are predisposed to an early rupture of the membranes. The latter is also frequently observed in abnormal positions. Prolapse of the cord was noticed in 1 per cent of the cases. This occurred most frequently in transverse positions and deflected head presentations. The extremities presented in five cases. The frequency of surgical intervention was not high and amounted to 5.2 per cent, 3.2 per cent in primiparæ and 7.5 per cent in multiparæ. Prolapse of the cord was the most frequent indication for surgical interference. Laceration of the cervix took place once. Irregular labor pains, protracted labor, and continuous contractions, the result of the early rupture of the membranes, were observed eight times in multiparæ and ten times in primiparæ. Post-partum atony was relatively rare and occurred in 4 per cent. The atony was very severe in a few cases. Febrile puerperium was observed in 10 per cent of the cases, 20.3 per cent in multiparæ and 10.7 per cent in primiparæ. The maternal mortality was nil, the foetal, 1.6 per cent. The most favorable time for the artificial rupture of the membranes in primiparæ is when the cervix is almost completely dilated and in multiparæ when the dilatation is about 3 inches.

BENTHIN.

PUERPERIUM AND ITS COMPLICATIONS

Hirst, B. C., Dickinson, R. L., and De Lee, J. B.: **Report of the Committee on the Treatment of Puerperal Fever.** *J. Am. M. Ass.*, 1913, LxI, 1528. By Surg., Gynec. & Obst.

The report was obtained by sending the following questions to 400 professors and assistant professors of gynecology and obstetrics in the United States and Canada, to 200 professors and assistant professors of surgery in the United States, and to 60 professors of obstetrics and gynecology abroad, in England, Ireland, Scotland, Germany, France, the Netherlands, Russia, and Italy.

Question 1. A primipara with septic abortion at three months, fever two days, hæmorrhage negligible, the ovum intact, retained. What would you do?

Question 2. A primipara with septic abortion at three months, fever two days, hæmorrhage negligible, the foetus expelled, placenta retained. What would you do?

Question 3. A primipara, fourth day after full-term delivery, positive evidence of uterine infection, no hæmorrhage, retention of ovular remnants suspected. What would you do?

Question 4. If you believe in active interference, when do you do it?

Question 5. What do you do when hæmorrhage complicates sepsis?

Question 6. If you believe in trusting to nature when ovular remnants are retained, how long do you wait before operating?

Question 7. Do you try to differentiate between sapræmic and bacteræmic states before operating? How do you do it?

Question 8. Do you make any distinction between the treatment of sepsis after abortion and that after full-term deliveries?

The answers to these questions are tabulated. The conclusions reached are as follows:

1. The majority clean out the septic uterus at once, a not negligible minority believe that it is safe to trust the expulsion of the infected uterine contents to the powers of nature.

2. In the majority of cases it has been found safe to invade the infected uterus with finger and curette.

3. There are, however, many cases in which the infection is of such a nature, or the resistance of the patient is of so poor a quality, that active interference turns the scales against the patient. She cannot stand the inoculation with autogenous vaccines.

4. The experience of the minority has proved that ovular remnants, even though infected, in the uterus do not create such dangerous conditions as we formerly believed, demanding instant removal, but that it is safe to wait for nature to erect her own barriers against the progress of infection, and that temporizing measures, or mildly stimulating ones, often suffice for a cure.

5. We all feel the need of some method by which it would be possible to distinguish benign from virulent bacteria living in the genitalia, but as yet no such method exists. When it becomes possible, our practice will become more definite. At present one-half of the authorities do not try to make the distinction, holding it impracticable.

6. After the uterus is once emptied it should not be again invaded by finger or curette.

7. Few would permit antiseptic douches.

8. The tampon is quite generally used to stop the bleeding in infected cases. Evidently there is not much fear of damming back the infection and permitting greater absorption.

HENRY SCHMITZ.

Zazkin, A. E.: **The Significance of Hæmolytic Streptococci in the Pathology of the Puerperium** (Zur Bedeutung der hæmolytischen Streptokokken in der Pathologie des Wochenbetts). *Arb. a. d. geburtsh. gynäk. Klin., Prof. Redlich, St. Petersburg*, 1913, lxxxiii, 112.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author examined the lochia of 53 puerperal women with temperature (among which there were 15 cases of endometritis, 11 of parametritis, 9 of acute pelvic peritonitis, and 17 of septic pyæmia) for hæmolytic streptococci according to Schottmüller's method. In 73.58 per cent of the cases they were present. As controls he examined normal

puerperal women, pregnant women, and gynecological cases for the same organisms. Among 56 normal puerperal women he found the hæmolytic streptococci in 21.43 per cent; in 23 pregnant women he found them in the cervix in 17.30 per cent; and in 32 gynecological patients he found them in 21.88 per cent.

An absolute diagnostic significance can, therefore, not be attached to the hæmolytic streptococci. Neither is their presence of any significance for prognosis. The prognosis, however, is much worse if they are found in the circulating blood. To determine whether coitus favored streptococcic infection he examined the preputial smegma of 30 men with no genital diseases and found hæmolytic streptococci in 6 cases. For prophylactic reasons, therefore, coitus must be interdicted during the latter months of pregnancy. BRAUDE.

Ahlfeld, F.: Origin of Endogenous Puerperal Infection (Quellen und Wege der puerperalen Selbstinfektion). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxiii, 1.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author considers as endogenous all those infections wherein pathogenic germs enter the uterus from the vagina, vulva, and external genital organs but not from the examining finger, instruments, or dressing material. Other possibilities for spontaneous infections are the development of septic endometritis from retention of the placenta or its débris after an uncomplicated labor or abortion, retention of lochia or infection of wounds, when accidentally reopened, with virulent lochial secretion. Endogenous infection, after a preceding gonorrhœa, results less from the gonococci than from secondary infection with streptococci. Spontaneous infection has been observed in labors in which an interval of days occurs between rupture of the membranes and labor. An epidemic puerperal fever following angina, diphtheria, scarlet fever, etc., might be considered as a metastasis which develops at the place of least resistance, i.e., the abraded uterine mucosa. However, entrance of the infectious germs through the vagina is possible.

Finally, infections may follow labor due to a reactivation of old parauterine pus infections, as ovarian abscess, pyosalpinx, or appendicitis. In the vagina of almost all women streptococci and other pathogenic bacteria are found. It is at present too difficult to give a collective account of all the possibilities as to the origin of puerperal fever based on the bacteriology of endogenous infections. It is also impossible to determine a fixed line of demarcation between endogenous and exogenous, or between spontaneous and imported infections. Since vaginal examinations have been dispensed with in lying-in hospitals puerperal fever has not disappeared, nor has the introduction of hot water-alcohol disinfection of the hands and thorough cleansing of the genitalia caused it to cease. The greater number of cases of uncertain origin are

probably best explained as due to the introduction of virulent bacteria into the genitalia either by the patient's own hands or by her clothing and bed-linen, or by cleansing after defecation. Contrary to the fear of Bumm, that by teaching the theory of endogenous infection a detrimental fatalism would develop, inducing negligence, the author explains that with the recognition of this teaching far greater demands are placed on the physician and nurse than formerly. They not only perform disinfection of the hands and of the patient more exactly, but attempt to do away with all the conditions which might lead to endogenous infection. EHRENBERG.

Jordan, J. F.: Vaccine Treatment in Cases of Puerperal Fever. *J. Clin. Research*, 1913, vi, 92.

By Surg., Gynec. & Obst.

The author states that, in a study of twenty-one cases of puerperal fever, examinations from the uterine discharge demonstrated a streptococcus growth in seventeen which was quite distinct from other streptococci. Also that in secondary pus, pleuritic fluid, or sputum, the growth was identical with that found in the uterine discharge. He suggests that this might be called streptococcus puerperalis. It grows freely upon agar in opaque colonies, and is much larger than other streptococci. It produces acid and clot in milk, acid in lactose, glucose, etc., but no change in raffinose, mannite, and inulin. These reactions differ from the streptococcus faecalis in mannite and from streptococcus pyogenes in the production of clot in milk.

As the streptococcus puerperalis is only found in puerperal cases it is unjust to blame the physician or midwife in endemic cases, as the probable source of infection is in the intestine. Perineal and rectal operations not followed by infection are due to the fact that the surgeon insures drainage where there is a possibility of discharge. After confinement with imperfect involution, the cavity of the uterus furnishes a perfect culture medium, the separating bridge of the perineum is frequently absent, and the passage of the streptococcus from the rectum to the uterus is actually facilitated.

In conclusion, the author makes a strong plea for bacteriological diagnosis and vaccine treatment. After the manual examination, if the surgeon is not satisfied that the uterus is clear, he can pass a blunt curette into the cavity, run it over the entire inner surface, and swab with a piece of wool dipped in a dilute solution of biniodide of mercury. Finally he inserts iodoform gauze for a uterine drain. This should be followed by an injection of vaccine containing 25 or 30 million of the streptococcus puerperalis. He believes that the best results are obtained when an autogenous vaccine has been prepared by a skilled bacteriologist. He does not claim that when the patient has been profoundly infected by the toxins this treatment will bring about a recovery, but he does ask that she should be given a chance to create an immunity before she has lost her individual resistance. ROBERT T. GILLMORE.

Saenger, H.: Sudden Death, Occurring Shortly after Delivery Without Any Apparent Cause; and Report of a Case of Acute Pancreatic Necrosis (Über plötzliche klinisch rätselhafte Todesursachen während oder kurz nach der Geburt, unter Zugrundelegung eines Falles von akuter Pankreasnekrose). *München. med. Wchnschr.*, 1913, lx, 1321.
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author reports several cases of sudden death occurring in or shortly after labor where a careful autopsy did not reveal the cause. He discusses a case of acute pancreatic necrosis occurring shortly after labor and heretofore not observed.

The patient was a perfectly healthy IV-para, 26 years old, who, 15 minutes after a normal, spontaneous delivery, was suddenly seized with severe vomiting, became unconscious and died. The clinical diagnosis of pulmonary embolism or eclampsia without convulsions was made. The autopsy, however, revealed an enlarged pancreas, the second half and especially the tail being hæmorrhagic with no softening of the pancreatic tissue. The pancreatic duct was normal. The fat surrounding the pancreas was sharply differentiated. Microscopic examination of the middle part and of the tail showed sharply defined, round, and wedge-shaped necrotic areas. In these areas intra-acinous fat cells were found. Microscopic examination of the liver showed, in addition to numerous fresh necrotic areas, extensive fatty degeneration of the Kupfer star cells.

Etiological factors were the increased predisposition, adiposity and alcoholism and, above all, the trauma incident to labor. The rapid labor and the consequent change in intra-abdominal pressure resulted in rupture of the pancreas. The changes in the liver were considered as due to the toxic action of the pancreatic juice in the blood.

BENTHIN.

MISCELLANEOUS

Kalmanowitsch, F.: Serious Anomalies in the Extremities of a New-Born Child, as a Result of Pregnancy in a Uterus Bicornis Unicollis (Schwere Veränderungen der Extremitäten eines Neugeborenen als Folge der Geburt bei Uterus bicornis unicollis). *Gynäk. Rundschau*, 1913, vii, 512.
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The anomalies were as follows: Both thighs were flexed firmly against the abdomen. The contracture of the hip-joint was so marked that the legs could be extended only slightly from the abdomen. In the knee-joints extreme flexion also existed, but the contracture here was not so firm. Both feet were in equinovarus position. Over both external malleoli pressure marks were present. Both upper extremities were freely movable, but the right hand was in a moderate position of hyperpronation with marked contracture. Furthermore, a micrognathia was present so that the alveolar process of the lower jaw was posterior to that of the upper jaw. It was a breech presentation. Examination of

the woman post-partum revealed the fact that she had a uterus bicornis unicollis. The head developed in the large right horn of the uterus and the breech in the much smaller left horn.

From this fact, the author concludes that the anomaly of the uterus was responsible for the changes in the extremities.

WIEMER.

Heyn, A.: Tumor of the Sacrum (Steistumor). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxiii, 469.
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The case was that of a II-para, 23 years old. In the second half of pregnancy she complained of severe pains in the abdomen and in the back. Edema was present in the abdominal wall and the legs, and the urine contained albumin. Rest in bed and diet resulted in the disappearance of the albumin and oedema, but both returned later with increasing pain. Headache was severe. The condition became aggravated and increased doses of narcotics were necessary. The abdomen was uniformly distended. Careful examination excluded twins but made out a head down in the pelvis with profuse liquor amnii. In the fundus the breech was palpable, with another mass alongside of it. The small parts were not palpable. A diagnosis of hydramnion, single pregnancy, and perhaps malformation was made.

Spontaneous labor came on during the seventh month of pregnancy. When the cervix was obliterated, the membranes were ruptured and eight liters of liquor amnii escaped, clear, slightly yellow, and without meconium. The small head was delivered spontaneously and the body also as far as the abdomen. Then, by severe traction, the breech was brought to the vulva. The short umbilical cord, having ceased pulsating, was tied and cut. Labor did not proceed further, as a large tumor in the sacral region prevented delivery. Both legs were brought down, and in spite of traction from below and pressure from above, no progress was made. During the attempt to puncture the cystic tumor, it burst and a large quantity of dark, bloody fluid, mixed with necrotic shreds, was evacuated. The mass then descended and was finally delivered, the placenta following spontaneously. During the puerperium the oedema and anasarca gradually receded and on the tenth day the patient was discharged. At that time there was only .05 per cent albumin in her urine.

The tumor was the size of a man's head and originated from the region between the sacrum and the anus. Its upper border was on a level with the iliac crest. Besides the cysts the tumor contained a number of nodules varying in size from that of a hazel-nut to that of a fist and of moderate consistency. It was a complete mixed tumor, an embryonal tumor of the Stolper's type, characterized by absolute irregularity in the arrangement of the tissues. The cells were of no definite type. The autopsy showed no other maldevelopment, except that the sacrum presented a dorsal curvature

as is common with such tumors. The presence of hydramnion was explained as due to exudation from the numerous blood-vessels of the tumor.

LANDAU.

Koplik: Infant Mortality During the First Four Weeks of Life (Kindersterblichkeit in den ersten 4 Lebenswochen). *Tr. Internat. Med. Cong.*, Lond., 1913, Aug.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Among intra-uterine causes of early infant mortality are hereditary predisposition and constitutional diseases of the mother. Another group comprises those infants for whom the cause of death is premature delivery or birth trauma. Artificially fed children show a markedly higher mortality. He gives statistics of the early infant mortality in Europe and America and their relation to economic conditions and legitimacy. The infant mortality could be considerably decreased by institutions for the care of pregnant women, nursing mothers and infants, and by more careful methods of obstetrical treatment and asepsis.

Reynolds, E.: Further Points on the Sterility of Women. *J. Am. M. Ass.*, 1913, lxi, 1363.

By Surg., Gynec. & Obst.

The author considers the causes and the treatment of sterility of women. The treatment has long been a failure. The reason for the latter is that symptoms of ill health of sufficient degree to demand treatment are always dependent on "gross pathological" conditions easily recognizable, while sterility, on the other hand, is usually dependent on mere perversions of function, which are not readily perceptible anatomically and can be detected only by observing the altered phenomena of the daily physiological functions of the organs.

The perversions of physiology which cause sterility in women are: (1) Conditions of the mucous membrane of the genital tract leading to alteration of the secretions of these mucosæ which are destructive to the continued life of the ova and spermatozoa which have been deposited in them, or which annul the effective motility of the spermatozoön in its efforts to reach the ovum; (2) conditions in the ovaries which inhibit the formation of the ovum or prevent its release at maturity.

The alterations of the secretions which destroy the life of the spermatozoön, or perhaps, of the ovum, are due (1) to pathological conditions of the mucous membranes which secrete them, (2) to chemical, biological, or mechanical changes of the secretions poured forth by the mucous membranes. These conditions may involve the four divisions of the genital mucosa, i.e., vaginal, cervical, corporeal, and tubal, either collectively or individually. The secretion of any of these divisions may be abnormal without prejudice to the secretions which originate above it, but an alteration of an upper secretion almost necessarily implies a similar abnormality of the secretions below it into which it is discharged.

Next the writer applies these facts to each of the secretions.

The alterations of the ovaries present in sterility are slight to moderate enlargements due to retention cysts, or unduly large, persistent, and frequently cystic corpora lutea.

The treatment varies, depending either on alteration of secretion or ovarian changes. Altered vaginal secretions are of infectious origin with the exception of a profusion, which is the result of a general pelvic congestion and of those hyperacidoses which are a part of general constitutional hyperacidosis. The treatment follows along the lines indicated by these three etiologies.

The character of the cervical secretion and its quantity are next investigated and the shape and dimensions of the cervical canal are ascertained. Treatment of the uterine mucosa is executed by curettage and disinfection. Its success is dependent on the coincident institution of free drainage. The latter is almost never effected by mere dilatation. Defective drainage must be individually treated. The internal os is examined by a sound, the tip of which is bent at an acute angle. Unexpected angulations of the canal and existence of bars and prominences in the mucous membrane can be detected by pulling this hook carefully downward over every portion of the internal os and cervical canal. Plastic operations on the cervix will remove any obstacles to free drainage. The uterus is next curetted and the curettage supplemented by thorough and deep disinfection of the uterine mucous membrane. The tubal condition is also benefited by the institution of free uterine drainage. If not, then major plastic operation on the tubes must be resorted to.

Ovarian infertility demands resections of retention cysts and persistent corpora lutea.

HENRY SCHMITZ.

Kehrer, E.: A New Procedure to Determine Pelvic Measurements by Means of X-Rays; Clinical Investigations (Ein neues Verfahren zur röntgenologischen Beckenmessung; klinische Untersuchungen). *Deutscher Gesellsch. f. Gynäk.*, Halle, 1913, May.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The attempts to take pelvic measurements by means of X-rays are not new. The methods heretofore employed were either not absolutely reliable or too complicated for practical application. In conjunction with Dessauer, the author constructed an apparatus for determining absolutely correct measurements of the true conjugate and transverse pelvic inlet by means of the X-rays. To obtain symphysis and promontory distinctly in one picture the pelvic inlet must be as nearly as possible parallel to the plate on the table. This is accomplished if the anterior portion of the iliac crest is horizontal, as in 90 per cent of the cases this portion of the crest is parallel to the pelvic inlet. Furthermore, the X-ray tube must be placed as near as possible to the middle of the sagittal diameter of the inlet.

Measurements on the skeleton were correct within $\frac{1}{2}$ millimeter; on the living puerperal woman, within 1 millimeter when compared with instrumental pelvimetry. It is easier to obtain accurate measurements during the early part of pregnancy, since in the latter months good pictures are hard to make, owing to the formation of secondary rays. It is advisable, therefore, where a contracted pelvis is suspected, to send such cases to the clinic early, even before pregnancy has commenced. In those cases in which cesarean section is to be employed, all instrumental means of measuring the pelvic inlet are contra-indicated owing to the danger of infection, and the time probably is not far distant when we shall demand pelvic measurement taken by the X-ray in all such cases.

Hart, D. B.: On the Duration of the Interval Between Insemination and Parturition. *Edinb. M. J.*, 1913, xi, 291. By Surg., Gynec. & Obst.

The author sums up his article as follows:

1. The duration of pregnancy in any mammal is not known and by our present means of investigation cannot be ascertained.
2. The initial date for the calculation of labor in the human female should be the first or last day of the last menstruation.
3. Midterm quickening may be used for corroboration, but is not reliable owing to mistakes that may be made by the patient.
4. Dates of labor in sufficient numbers plotted out in curves gave approximate frequent polygons, usually skew.
5. Tessier's ewe-labor curve is the best, and is given in 24-hour groups. The greatest number of labors in his ewe cases occurred between the 149th and 153d days.
6. In cattle, Spencer's statistics in 2-day groups give a skew frequency curve. The greatest number of labors occurred between 281 and 289 days (530 out of 764 cases).
7. Tessier's cattle cases give an analogous curve.
8. The date of labor in mammals is therefore a varying and not an exact one, and the greatest number falls within certain definite days.
9. A long insemination- or menstrual-labor period does not necessarily mean a prolongation of the duration of pregnancy.
10. The alleged greater size of the fœtus in long insemination-labor periods is not accurately proven, and it is not supported by Spencer and Tessier's results.
11. The view given of the cause of the insemination-labor or menstrual-labor dates is based on the probable date of the meeting of the gametes on each side. The date of labor and of a certain probable duration of pregnancy is still in the dark, and the above explanation he has given he says must be considered elementary and certain to be expanded in the future. The date of labor can be given as likely to occur within a certain number of days reckoned from a definite first point. ROBERT T. GILLMORE.

Schlimpert, H., and Issel, E.: Abderhalden's Reaction with Animal Placenta and Serum (Die Abderhaldensche Reaktion mit Tierplacenta und Tierserum). *München. med. Wchnschr.*, 1913, Lx, 1758.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The authors tried Abderhalden's reaction with human and animal serum on the placenta of horses and sheep and in 78 experiments failed to get the reaction more than four times. They come to the following conclusions: (1) In pregnant horses and sheep, ferments circulate in the blood which decompose the placenta of the same species. (2) The fœtal as well as the maternal part of the placenta of other species is also decomposed by these ferments. (3) The inciting of the formation of ferment by chorionic villi is improbable in horse and sheep placenta on account of anatomical hindrances. (4) Human serum reacts the most vigorously, and horse placenta are the most actively decomposed by it. BOXER.

Thomas, E.: Biology of Colostrum Bodies (Zur Biologie der Colostrumkörperchen). *Ztschr. f. Kinderh.*, 1913, xiii, 291.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author put colostrum in capillary tubes with emulsions of different kinds of living bacteria. He found that both the polymorphonuclear and mononuclear colostrum cells as well as the granular bodies resembling epithelial cells had decided phagocytic action. This appears to exclude the possibility of an epithelial origin for any colostrum cells, though this has been reaffirmed recently. Both kinds of cells in the colostrum have the same phagocytic power, in contrast to those of the blood, in which the pure mononuclears have considerably less phagocytic action. NOTHMANN.

Paramore, R. H.: The Intra-Abdominal Pressure in Pregnancy. *Proc. Roy. Soc. Med.*, 1913, vi, Obst. & Gynec. Sect., 291. By Surg., Gynec. & Obst.

The author has observed the pressure found in the rectum in pregnant and non-pregnant women and believes that that pressure is increased considerably in pregnancy. In two cases suffering from the toxæmia of pregnancy the figures obtained were considerably increased over normal pressures in pregnancy. The author hopes to demonstrate that this pressure is always much increased in toxæmias, and has advanced a mechanical theory of toxæmia.

During pregnancy the abdominal muscles are continuously stretched, and as a result they undergo degeneration-regression (Bland-Sutton); they become atrophied, together with the tendons and aponeuroses. The result is diastasis of the recti. The weakening of the abdominal wall results in a lower abdominal pressure in subsequent pregnancies. The fact that children are generally larger in multi-gravidæ than they are in primigravidæ supports this opinion. It is reasonable to suppose that fœtal growth can occur more readily when the pressure about the fœtus is at a minimum. C. H. DAVIS.

GENITO-URINARY SURGERY

KIDNEY AND URETER

Lippens: Spontaneous Perirenal Hæmatoma
(L'hématome périrénal spontané). *J. de chir.*, 1913,
xi, 1. By Surg., Gynec. & Obst.

Lippens' article is based upon a study of reports of twenty-three cases of this rare affection which he has been able to collect from the literature since the condition was first described by Wunderlich in 1856 as "Spontaneous Apoplexy of the Capsule of the Kidney."

The pathogenesis of the condition is by no means certain. Only fourteen of the twenty-three collected cases were histologically examined, and twelve of them had the lesions of acute nephritis or chronic interstitial nephritis. Two cases reported histologically normal organs. In the majority of the cases, the lesion consisted of a recent large perirenal hæmatoma. Sometimes it remained collected under the capsule of the kidney; more often it broke through this barrier, spread through the tissues and formed a doughy mass extending as high as the diaphragm or into the pelvis and reaching the median line. The peritoneum, the mesentery, the colon, the abdominal wall, and the scrotum have all been infiltrated in some cases.

Lippens is inclined to accept the theory of Wunderlich, namely, that on the surface of a kidney predisposed to hæmorrhage, an artery ruptures and the blood escapes between the capsule and the kidney parenchyma. Four eventualities are described: (a) the extensive subcapsular perirenal hæmatoma, when the capsule is loose; (b) circumscribed subcapsular hæmatoma, when the hæmorrhage is not forceful enough to dissect up from the kidney its unevenly adherent capsule; (c) the extracapsular hæmatoma, when the suddenness and force of the hæmorrhage rupture the capsule and the blood escapes into the perirenal tissues to any degree. If this hæmatoma is circumscribed and later becomes encysted it forms (d) the circumscribed encysted perirenal hæmatoma. After the hæmatoma has once become encysted, many of the phenomena reported in the collected cases may be accounted for. The wall may be partly formed by the kidney parenchyma and assume secretory powers. The contents may undergo all the modifications usual to encysted blood—may be serous or sero-fibrinous or may form the "perirenal hygroma." The term "external hydronephrosis" is misleading.

The left side was affected fourteen times, the right seven; in two cases it was bilateral. Sixteen men were affected, as compared to seven women. It attacks the young oftener than the old.

The three cardinal symptoms are sudden, violent

pain in the kidney region, soon accompanied by symptoms of internal hæmorrhage, followed by the rapid appearance of a large tumor. Pain is generally localized in the kidney region. Sometimes, however, it is spread over the entire abdomen. These pains very closely simulate appendiceal and gall-stone pains. Occasionally, there are repeated attacks of colic for many months. Hæmorrhage is shown by the usual signs and symptoms. The tumor forms rapidly, is always large, circumscribed, elastic, smooth, and regular. It can inhibit the respiratory movements and is almost immovable. It is dull on percussion and very tender on palpation.

Another symptom which might aid the diagnosis is a temperature of between 38° and 40° C. Examination of the urine usually shows albumin and casts, but seldom blood from the hæmorrhage. Ureteral catheterization may be performed to rule out hydronephrosis. Sanguinous suffusion, though rare, is pathognomonic when, without history of injury, the point of origin is seen to be the lumbar regions. Radiography is only useful in ruling out stone.

A diagnosis of spontaneous perirenal hæmatoma has never been made before operation. It is most frequently mistaken for perinephritic abscess because of the fever which is usually present. It has also been mistaken for tumor of the spleen, appendicitis, and cholecystitis.

The prognosis is grave. Left alone, it has invariably proved fatal on account of hæmorrhage and the consequences which follow (seven cases reported).

The treatment is surgical. Of ten cases, in which the conservative treatment of incising and tamponing was practiced, six survived. Nephrectomy was practiced six times with five recoveries. The author believes that in case of a recent, brusque hæmorrhage, cleaning and tamponing are indicated. If the lesion is old or if there have been repeated hæmorrhages, nephrectomy is the operation of choice. Transperitoneal and lumbar incisions have been used with equal success. The author prefers the paraperitoneal incision of Verhoogen or the transverse incision. Each case should be operated upon at the earliest possible time. Naturally the sooner the operation follows the hæmorrhage, the greater the chances for a favorable outcome. ELLIS FISCHER.

Braasch, W. F.: Clinical Data on Renal Lithiasis.
J. Lancel, 1913, xxxiii, 561. By Surg., Gynec. & Obst.

This article is based on the study of two hundred and fifty-one cases. An analysis of the cases showed that the classical symptoms of renal lithiasis were present in but 46 per cent of cases. The phenomenon of pain and its radiation is carefully analyzed. Pain was absent in 8 per cent of the cases. Braasch dwells

at length on the value of the radiogram, also calling attention to the fact that a radiographic shadow located in the region of the kidney does not necessarily indicate renal lithiasis. The general characteristics of shadows are considered, as well as the types of stones which are not visible in the radiogram. In some cases it may be necessary, in order to identify a localized shadow, to resort to pyelography. Lesions of other abdominal organs may be present in cases of renal lithiasis.

The author calls attention to the co-existence of gall-stones and acute and chronic appendicitis with kidney stones. Perinephritic infection, value of urinalysis, and functional tests in kidney-stone are briefly considered.

HERMAN L. KRETSCHMER.

Vidakovich, C.: Injuries to the Kidney Vessels (Über die Verletzungen der Nierengefäße). *Virchow's Arch. f. path. Anat., etc.*, Berl., 1913, ccxiii, 554.
By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author observed a case of complete section of the kidney artery from a wound with a sharp instrument. He performed ligature of the pedicle and nephrectomy and the patient recovered.

From this case and the study of 22 cases of injuries to the blood-vessels of the kidney reported in the literature he advocates a separate reporting of injuries to the kidneys and to the kidney vessels, and gives a detailed discussion of the frequency, mechanism, pathological anatomy, symptoms, diagnosis, prognosis, and treatment of the latter. Injuries to the kidney vessels are comparatively rare; they form only a very small part of the injuries to the kidneys reported in the statistics. The author could find only 18 cases of subcutaneous and 5 cases of open injuries. The subcutaneous injuries generally result from violence, which acts in the direction of a tangent to the kidney and forces it forward on the pedicle, stretching it lengthwise and so tearing it; or, in a fall from a high place, a movable kidney is moved still farther by the violence of the fall, so that the pedicle is stretched and torn. The clinical picture is that of severe hæmorrhage and rapidly developing anæmia. The hæmorrhage may take place in various neighboring body cavities, or in the case of open wounds may be external. In the majority of cases there is no hæmaturia, and if there is no hæmaturia in cases of hæmatoma in the region of the kidney it may be regarded as pathognomonic of injury to the vessels of the kidney.

RUBRITIUS.

Boland, F. K.: Traumatic Rupture of Kidney; Three Cases. *South. M. J.*, 1913, vi, 669.
By Surg., Gynec. & Obst.

The author reported three kidney cases, two of traumatic subcutaneous rupture in children and one stab wound. In the first two cases nephrectomies were done. The lines of cleavage were the same, being situated between the lower and middle and the upper and middle thirds at a right angle to the long axis. The second line of cleavage was more

pronounced in the second case. The author explains the location of the lines of cleavage by Küster's theory of rupture in kidneys by hydraulic pressure. ". . . In most cases it is due to a force, hydraulic in nature, acting through full vessels and a full pelvis, from the hilum in the direction of the tubules," which is the line of least resistance. The junction between the lower and middle thirds seems to be that line. Nephrectomy is the operation of choice unless hæmorrhage can be controlled by sutures, as was done in the third case.

C. D. PICKRELL.

Billington, W.: Nephroptosis: Its Clinical Significance. *Clin. J.*, 1913, xlii, 401.

By Surg., Gynec. & Obst.

Renal mobility is a potent cause of ill health and is responsible for a serious fall in the working efficiency of otherwise healthy people. The author defines a pathologically movable kidney as one the position of which is affected by influences other than respiration, and in particular by gravity.

Heredity is a factor of some importance. But muscular overstrain is the most important direct cause. Trauma is particularly liable to cause displacement of the kidney in girls at and soon after puberty. The modern tendency for growing girls to take part in active games is responsible for many loose kidneys. Constriction of corsets is frequently blamed, but its being a primary cause of nephroptosis is very doubtful. The waist line is below the level of the normally placed kidneys, and constriction of the waist rather tends to support than to force down these organs — if the kidneys have already fallen below the waist line, constriction aggravates the nephroptosis.

Childbearing is more a cause of generalized visceroptosis than of isolated nephroptosis; most cases of the latter are seen in unmarried or comparatively sterile women. The possible influence of constipation is hard to estimate. Absorption of the perinephric fat in wasting diseases is not a cause of nephroptosis, as this fat has very little supporting function and acts merely as packing. Its disappearance is one of the first results of abnormal mobility, but is not the cause of the latter.

Examination for kidney mobility must be made both in the recumbent and the standing position. The latter is very important.

At operation, the lumbar fossa is found empty, there is very little fat, and the peritoneum is in danger of being wounded unless care is taken. There are adhesions and new formed vessels. The kidney is pale, flabby, and its capsule is mottled and not very adherent. Gross hydronephrosis is rare.

Symptomatically, cases of nephroptosis may be arranged in 5 groups: (1) There are only local symptoms, distinctly referable to the kidney. Colon bacilluria is frequent. (2) The symptoms are due to functional disturbances of the sexual organs. This must not be forgotten before operations on the female pelvic organs. Nephropexy gives disappoint-

ing results. (3) There are mainly functional digestive troubles. Nephropexy gives excellent results. (4) The symptoms are those of spinal and cerebral neurasthenia. These cases are very hard to cure, but a prolonged post-operative treatment may yield very encouraging results. (5) The symptoms are definitely those of mental derangement.

Operative treatment is necessary in freely movable, or rotated kidneys, in cases with adhesions, and those with marked local renal symptoms. It is important to consider the personal equation of the patient. Patients over 50 ought not to be operated on, as a rule. Nephropexy does not cure the patient except when performed for purely local symptoms; it only makes recovery possible.

FAXTON E. GARDNER.

Swain, J.: Hypernephroma or Mesothelioma of the Kidney. *Bristol Med.-Chir. J.*, 1913, xxxi, 213. By Surg., Gynec. & Obst.

The author of this article reviews the conclusions of the study of Grawitz in respect to these peculiar tumors of the kidney and believes Wilson's contention that the theory of Grawitz has been successfully refuted by Stoerk on the following grounds:

"(1) The Grawitzian tumors most frequently develop at the lower pole of the kidney, where adrenal rests are not found; (2), the so-called fat of the cells of the Grawitzian tumors is usually not fat, but a vacuolation related to the contents of the cells; (3), the Grawitzian tumor is a tumor of the renal cortex and not of the renal capsule, in which adrenal rests are usually found; and that (4) though the Grawitzian tumors do frequently contain cordons, which, however, only remotely resemble those found in the suprarenal, yet they almost invariably contain tubules, the analogues of which are never seen either in the normal suprarenal or in the tumors of that gland."

The author quotes from Wilson's article, in which he says "that these tumors are mesotheliomas, or more definitely nephromas, that is, that they are elaborated from masses of nephrogenic tissue which have never become connected with the renal pelvis, and which have never attained adult type in either form or function."

He further states that whatever the theory of origin of these tumors may be, their clinical importance and their malignant character is general. He is not able to outline a very definite set of symptoms. He lays stress on pain in the back reflected along the ilioinguinal and iliohypogastric nerves and early frequent micturition.

Regarding the hæmaturia the author writes as follows:

"Sudden and profuse hæmaturia is said to be a common symptom, though I have not found it so, and as the renal substance is gradually absorbed, rather than invaded, by the growth of the tumor, and the renal pelvis is not necessarily involved, there seems to be no reason for expecting hæmaturia to occur; but should it take place it would probably

be accompanied by some renal colic, owing to the presence of blood-clot in the ureter, though the pain in the back frequently alternates with the occurrence of bleeding. In this last respect the symptoms differ from the hæmaturia and pain which occur in association with renal calculus. The urine presents no special features. A tumor is found presenting the characteristics of a renal swelling, and later on metastases occur; the general health of the patient begins to decline, and the usual cachexia of malignant disease ushers in the final stage."

He lays stress on the secondary deposits occurring along the veins and infecting the long bones, lungs, and liver. He notes that varicocele is a very common accompaniment of this tumor, especially on the left side. On section it shows yellowish patches mixed with hæmorrhagic areas, some of which have a tendency to cyst formation. The cells are of epithelial origin or epithelioid character and arranged in nests or columns. Histologically, therefore, the growth approaches sarcoma in structure, in spite of the epithelial formation of its cells. He recites two cases, one of which died four months after operation, the second of which lived from May 8, 1911, to the last part of July, 1912.

The author in conclusion emphasizes the necessity of palpating the kidney early in order to discover these tumors, which frequently give no symptoms until it is too late. He notes that the growth is sometimes very slow and that the tumor may become very large before having been discovered. He states that 78 per cent of all tumors of the kidney belong to this class. He believes that if operation is performed early enough a nephrectomy should remove the tumor before metastases occur.

A. C. STOKES.

Foster, N. B.: Functional Tests of the Kidney in Uræmia. *Arch. Internal Med.*, 1913, xii, No. 4. By Surg., Gynec. & Obst.

The author calls attention to certain limitations of two popular functional renal tests in relation to diagnosis and prognosis in uræmia. Uræmia has no definite symptom-complex but is conceived as intimately related to severe nephritis and as representing "the denouement of a pathological process dependent on renal disease, or of which renal disease is an invariable accompaniment." It follows, therefore, that the value of a functional test can be measured by the results in demonstrated cases of uræmia.

In America the most generally used functional test is that of phenolsulphonephthalein. Cases of uræmia often fail to eliminate enough of it in two hours to permit of quantitative estimation. Such cases sometimes die and sometimes improve sufficiently to leave the hospital. Three notable exceptions to the test findings are emphasized: Case 1, with a phthalein output of 53 per cent in two hours, died one month later in uræmia and autopsy showed "chronic nephritis, cardiac hypertrophy and dilatation, pulmonary oedema and cerebral oedema." Case 2, with a phthalein output of

63 per cent, complained of extreme vertigo and cramps in the legs. In 24 hours there was coma and death occurred three days later. Anatomical diagnosis: Chronic nephritis, small granular kidney, cardiac dilatation, ulcerative colitis and oedema of the brain. Case 3: For a month there had been increasing dyspnoea and swelling of the abdomen and legs. The course of the disease appeared favorable. Eleven days before death phthalein was 57 per cent, but without prodromal symptoms; this patient had a severe convulsive seizure lasting one hour, and died shortly after. The anatomical diagnosis was: Chronic parenchymatous nephritis, large white kidney, cerebral oedema, oedema of the lungs. These three exceptions to the usual operation of the phthalein test in nephritis suggest to Foster that its excretion may depend "on some other factor (circulation?) than pure renal disease, which by its presence or absence determines the rate of secretion by the kidney.

In Germany, in the last few years, there is an ever increasing insistence on the significance of the non-protein nitrogen of the blood in nephritis. Foster found the average non-protein nitrogen in normal controls to be between 32 and 33 mg. in 100 ccm. of blood, with 44 mg. as the maximum. In 72 cases of uræmia it was 87 mg. per 100 ccm.

Strauss believes that in parenchymatous nephritis the non-protein nitrogen is usually low, which Foster confirms, particularly "in cases of purely tubular involvement in which the process has not been of long duration, but it is occasionally low in cases of contracted kidney also. Figures under 40 mg. in 100 ccm. of blood in these cases with uræmia are not very exceptional in my series." He cites case four, who four days before death showed 28 mg. of non-protein nitrogen in 100 ccm. of blood and whose 24-hour urinary output was between 500 and 800 ccm. with a trace of albumin and many casts. Anatomical diagnosis: Chronic nephritis (extremely small granular kidney), oedema of brain, marked colitis, uræmia.

FRANK HINMAN.

Firth, J. L.: Nephropexy. *Bristol Med.-Chir. J.*, 1913, xxxi, 220.
By Surg., Gynec. & Obst.

The author states that the object of his communication is to express appreciation of the technique of nephropexy as recommended by Billington, and at the same time to emphasize the fact that in this operation great caution has to be taken to avoid wounding the pleura. He further states that his reason for passing from other well-known methods of anchoring the kidney to the Billington method is the fact that the other methods seem to anchor the kidney too low. He describes the Billington method:

(1) Oblique incision, beginning over the eleventh intercostal space, (2) separation of the fat and perinephric fascia "from the muscles of the back for some distance above and below the last rib," (3) dislocation of the kidney into the loin, and separation of all adhesions and fat, (4) deflection of a flap of renal capsule downward from the upper half of

the kidney, two-thirds of the flap being from the posterior surface, one-third from the anterior, (5) insertion of two supporting subcapsular sutures, after the manner of Goelet and Brödel, into the lower half of the kidney, the ends of these being long enough to pass through the muscles and skin above the wound to be tied over gauze rolls, (6) passing a curved Spencer-Wells forceps through the eleventh intercostal space at the edge of the erector spinæ muscle, so that the ends of the forceps curve round the last rib and project below into the upper part of the wound, and (7) passing the capsular flap grasped in the forceps mentioned over the last rib and suturing the portion drawn out to the capsular surface of the kidney at the lower border of the rib.

The author further describes a case in which he had an accident. He opened the pleura in attempting to attach the kidney to the last rib as described by Billington and pneumothorax resulted.

Forty-eight hours after the operation, difficulty in breathing was more marked, respiration rapid, patient rather dusky in appearance, resonance on percussion from the right chest across the middle line to slightly beyond the left edge of the sternum in the cardiac region. The apex beat was still further displaced to the left.

An aspirator needle was therefore passed into the chest on the right side through the seventh intercostal space near the posterior axillary line and connected with the vacuum made in a Winchester quart bottle. The air immediately passed into the bottle from the chest. At the same moment the patient began to have a series of short coughs, rapidly repeated, and she became more dusky and distressed. The vacuum was shut off, and after a pause of half a minute or a minute the cough ceased, and the communication with the bottle was re-established. More air came from the chest and more coughing occurred, but not so much as before. The vacuum was again shut off, and after a pause, again connected with the chest, and then the needle withdrawn, as no more air seemed to be obtainable from the pleural cavity. The signs of pneumothorax could not be elicited, and the apex beat had come back at least an inch nearer its normal position. The patient would not confess that her breathing was easier for another ten minutes. After that the convalescence was normal.

The author concludes by saying that he believes the Billington operation for movable kidney is a very good one, perhaps the best yet described.

A. C. STOKES.

BLADDER, URETHRA, AND PENIS

Beer, E.: The Relative Values of the Röntgen Ray and the Cystoscope in the Diagnosis of Vesical Calculi. *J. Am. M. Ass.*, 1913, lxi, 1376.
By Surg., Gynec. & Obst.

The author states that in the radiographs of twenty two cases of vesical calculi the latter showed in only six cases. In the sixteen negative röntgeno-

grams the calculi were diagnosed by cystoscopy. Nine of these calculi were examined chemically and found to be composed of uric acid and urates. The author recommends that cystoscopy be given the preference in the diagnosis of vesical calculi.

V. LESPINASSE.

Bonn, H. K.: The Differential Diagnosis of Bladder Neck Lesions. *Indianapolis M. J.*, 1913, xvi, 415.
By Surg., Gynec. & Obst.

The author classifies these lesions as those relating to the bladder, the prostate, the urethra, those cases which may be termed "extravesical" and "extra-urethral" and those due to spinal lesions. Vesical causes are: Vesical calculus, papilloma and malignant growths obstructing the vesical neck, and intense congestion of vesical neck, whether of gonorrhoeal or other origin. Prostatic causes are: sarcoma, carcinoma or tuberculosis of the gland, and prostatitis, when they produce the pathognomonic symptom-complex, also a calculus lodged in the urethra, particularly in the prostatic portion. Extravesical causes are: vesiculitis, appendicitis or salpingitis with vesical adhesions, inflammatory exudates, pressure of the sigmoid and abscess, whether in the pelvis proper or in the Retzius space. Extra-urethral causes are: periurethral exudates or abscesses and urinary extravasation. He states that a temporary dysuria is occasioned by dilating a stricture or performing cystoscopy. *Tabes dorsalis* is given as the spinal cause. The author makes a plea for a very exhaustive history of the patient in these cases and a thorough conservative examination, not doing too much at one examination. The differential diagnosis between posterior urethritis, hypertrophy of the prostate, prostatitis, vesical calculi, gynecological conditions, and tuberculosis of the kidney is also considered.

C. R. O'CROWLEY.

Miller, A. G.: Can the Urinary Bladder Empty Itself? *Edinb. M. J.*, 1913, xi, 316.
By Surg., Gynec. & Obst.

According to Miller, an acquired bad habit is not infrequently the cause of the presence of residual urine in the bladder. A man seldom passes water except when obliged to do so by a feeling of discomfort. Accordingly, he does not let the bladder empty itself by reflex action, but tries to expedite the process by voluntary contraction of the abdominal muscles. When there is a great hurry and limited time, the action is generally incomplete. Relief of discomfort being what is sought, the process is arrested when that relief is obtained. As life advances the incomplete act becomes more frequent. In this way, residual urine forms and accumulates from mere habit.

The cure consists in training the bladder to resume its normal function. The author goes so far as to assert that the same method ought to be successful also in those cases where the residual urine is due to the presence of an obstruction along the urethra.

FAXTON E. GARDNER.

Keyes, Jr., E. L.: Ultimate Results of the Chetwood Operation for Retention of Urine. *N. Y. M. J.*, 1913, xcvi, 645. By Surg., Gynec. & Obst.

Keyes employs the Chetwood operation for the removal of all minor obstructions, such as bars and contractures of the bladder, and in some cases of prostatic hypertrophy, where the patient's general condition is bad. He lays emphasis on the selection of cases, as one is likely to err, first, in operating upon patients suffering from painful or frequent urination, but with little or no retention, who would do as well without operation of the neck of the bladder; second, in attempting to relieve by cauterization an obstacle requiring prostatectomy. The advantage of the operation is that it may be performed under local anæsthesia, takes only five or ten minutes, and causes less shock than any prostatectomy. From three cases illustrating incomplete relief he comes to the following conclusions: First, if the retention is not entirely relieved a return of symptoms may be looked for. Second, other conditions, such as pyonephrosis, may spoil what would otherwise be a cure. Six of his patients were left with incontinence of urine and seventeen of twenty-seven patients were cured after periods varying from one to nine years. He expects to obtain a much larger proportion of cures in his next series of twenty-five cases.

J. RADDA.

GENITAL ORGANS

Caron, M.: A Case of Malignant Tumor of the Testicle; with Remarks. *Am. J. Urol.*, 1913, ix, 483.
By Surg., Gynec. & Obst.

Caron reports a case, age 26, which entered the hospital with the diagnosis of pulmonary tuberculosis.

A few days later an increasing enlargement of the testicle, which was slightly tender, was noticed. There were no adhesions or sinuses. A diagnosis of secondary tuberculosis of the testicle was made. The patient died one month later, with choking paroxysms and severe pain in the chest.

At autopsy the lungs were filled with circumscribed nodules about the size of a walnut, but there were no signs of tuberculosis. The prelumbar lymph nodes were very much enlarged; their surfaces were irregular and friable. The walls of the aorta and vena cava were intact. The liver, lungs, and kidneys contained almost the same material. A microscopic section from the liver, lungs, and kidneys showed that these masses of cells were entirely different from those found in the prelumbar lymph nodes. In other words, these were the angioplasmic cells described by Malassez in 1878, but later recognized as syncytial cells. The cells in the lymph nodes were exactly like those which Chevassu called seminoma (epithelial in type).

The testicle showed infiltrating regions in which both types of cells could be seen. The author believes that the metastasis took place through the lymphatics to the lymph-nodes and through the

blood to the kidneys, liver, and lungs. He regards this tumor of the testicle as embryonal in origin.

A. C. STOKES.

Ombredanne: Acute Primary Orchitis in Children (L'orchite aiguë primitive des enfants). *Presse méd.*, 1913, xxi, 595. By Journal de Chirurgie.

Acute orchitis is rare in children before puberty; at this period mumps does not generally affect the testicle and gonorrhœa is exceptional. But sometimes boys of 10 to 15 complain of extreme pain in the testicle of one side, beginning suddenly. The scrotum is red and œdematous on that side; the testicle is very painful on pressure; the cord is swollen and painful, especially in the lower part, and sometimes there is fever, loss of appetite, and nausea.

With rest in bed the symptoms generally abate; but in some cases the testicle atrophies afterward. Often the swelling increases, the scrotum becomes adherent, and an abscess forms which must be evacuated. Recovery then takes place in from three to four weeks; or, sometimes after the evacuation of the abscess, gangrenous particles are discharged, in which seminiferous tubules can be made out. The testicle is discharged little by little and recovery then takes place.

This form of acute orchitis has quite generally been attributed to tuberculosis. The author discusses the causes. He had 7 cases in boys of from 9 to 15, on all of which he operated. In 4 there was undoubted torsion; one case where it was doubtful, as exploration was not carried far enough; in one case there certainly was not torsion, and in one case he thought from the lesions there had been torsion and spontaneous detorsion. Therefore, in the 7 cases certainly there were 4 cases of torsion, probably five and possibly 6.

Ombredanne concludes that there are two forms of orchitis—a true orchitis, which may be tubercular, though in his cases inoculation of the cobra was negative, and orchitis from funicular torsion. Three of the four cases of torsion confessed to being masturbators, and he thinks this may be a cause. As a result of the congestion caused by masturbation the vessels dilate, elongate, and push against the gland, causing it to rotate around the suspensory ligament as an axis.

He believes that operation is justified in all cases, since with operation the patients recover within ten days and the testicle is saved, while without operation the testicle is generally destroyed. The operation consists in fixing the vaginal tunic to the scrotum if the torsion is supravaginal; in fixing the testicle to the vaginal tunic and the latter to the scrotum if the torsion is intravaginal. It remains to be seen whether the future development of these testicles will be normal.

Somers: Atrophy of the Prostate Gland. *Calif. St. J. Med.*, 1913, xi, 411. By Surg., Gynec. & Obst.

The author recites the symptoms, causes, and treatment of atrophy of the prostate gland, quoting

freely from the literature of the different authorities, and reporting the histories of three of his seven cases.

He claims that it averages about 250 grains in weight; that the senile form is the most common of the different varieties, occurring rarely before 50, although there are instances at the ages of 17, 22, 26, and 30; that there is a grievous deficiency in our knowledge of the pathological condition and therapy of bladder insufficiency without prostatic hypertrophy. His series consists of 26 cases, 19 hypertrophies and 7 atrophies. His therapy is operation, if conditions are favorable, and his method Young's perineal operation, which he has employed with favorable results.

Somers draws the following conclusions:

1. In the clinical features of bladder insufficiency there is very little distinction between atrophy and hypertrophy.

2. The cause is not clear, different authors believing it is an anatomical change in the bladder wall; an atrophy in the bladder muscle; a change in the bladder opening causing mechanical obstruction; a chronic contraction at the neck of the bladder, or that the insufficiency is due to a contraction of the neck arising reflexly.

3. The symptoms of mechanical obstruction due to atrophy cannot be distinguished from those of mechanical obstruction due to hypertrophy.

4. In the atrophied gland the obstruction to the bladder opening comes probably as a result of atrophy of gland canals, when a change in the proportion of the gland tissue and stroma takes place.

5. The treatment should be a radical removal of the diseased tissue surrounding the inner opening of the bladder. The operation is difficult, due to the fact that there is no adenomatous tissue and the hold on the surrounding tissue is extremely firm.

LOUIS GROSS.

Squier, J. B.: Vital Statistics of Prostatectomy. *Surg., Gynec. & Obst.*, 1913, xvii, 433.

By Surg., Gynec. & Obst.

The author has compiled from his own experience the percentage of mortality of operative and non-operative cases of prostatic obstruction.

He claims that fifty per cent of unoperated patients will die within five years from the onset of obstructive symptoms where catheter life is not begun. The beginning of catheter life shortens this expectation of life almost fifty per cent (two years and eight months), and increases the mortality to sixty-six and two-thirds per cent within the shortened period.

Among over two hundred patients subjected to operation there has been an operative mortality of but seven per cent. The type of operation has not influenced the mortality percentage. The causes of death have been shock, anuria, and pulmonary embolism. He believes that continuous irrigation of the bladder after operation is apt to dislodge blood clots and excite hæmorrhage, and advises against it. The use of the permanent catheter following opera-

tion is also deprecated for fear of producing vesical spasm with consequent dislodgment of blood clot in the pelvic veins and the formation of emboli.

The poorest operative risks are thought to be those prostatic cases suffering from overdistended bladder in whom no infection is present. The statement is made that where a mild degree of cystitis has been present for some time before operation, the patient seems to have acquired a certain immunity to infection. Patients who have not acquired such immunity before operation and who are, in addition, afflicted with renal disease, are usually those who will develop acute exacerbations of a nephritis when post-operative absorption occurs.

Carcinoma of the prostate has been met with in ten per cent of the series. He believes that operation is justifiable in many cases of prostatic carcinoma if only to relieve the obstructive symptoms and make life more livable.

Of a series of one hundred operations performed according to the author's suprapubic intra-urethral method, eighty-seven are alive at the end of from one to four years after operation with complete relief of symptoms. He concludes with the remark that "post-operative urinary incontinence is an unknown accident following a properly performed suprapubic enucleation of the prostate."

MISCELLANEOUS

Davis, T. G.: Hema-Uro-Chrome; A New Laboratory Test for Cancer and Sarcoma, from the Urine. *Calif. St. J. Med.*, 1913, xi, 409.

By Surg., Gynec. & Obst.

Davis presents a test for cancer and sarcoma which will give evidence of its presence before it can be seen or determined by palpation or by any other method. This test has proven positive in a large percentage of cases.

He advises the beginner to procure the urine from an authentic case of cancer and sarcoma, and acquaint himself with the color reaction, after which errors are less likely to occur.

The urine should be carefully collected, fresh. No preservative should be used except that when it is impossible to make immediate examination, hydrochloric acid in the proportion of 1 part to 10 of urine may be added, this being the proportion used in the test. Formaldehyde inhibits the test; and hexamethylene, tetramine, formin or urotropine should be avoided where the test is to be applied.

Select a flat-bottomed flask of about 180 ccm. or 6 fl. ozs. capacity, with a narrow neck, that the ether may be brought up into it and easily seen and separated. To 100 ccm. of urine in the flask add 10 ccm. of hydrochloric acid. Heat over a slow fire until ebullition begins; turn out the fire, and allow it to cool slowly for a time, after which cooling may be hastened by immersion in water. When cold add 30 ccm. of ether. Cork, tying the cork to prevent evaporation. Turn the flask upside down several times during the six or eight hours required

to complete the test. Avoid hard shaking, which interferes with separation of the ether. While in cases of pronounced or extensive cancer the ether will acquire a markedly red color in as short a time as twenty minutes, he has found six or eight hours necessary for the complete extraction of the hemaurochrome by the ether. By the addition of cold water the colored ether may be raised into the neck of the flask for observation, and be removed by a pipette into a bottle and corked, sealed and kept for comparison if desired.

The author found that syncytioma, which is practically a malignant condition, and extensive suppurating processes, especially if tubercular, gave a somewhat red color to the ether, but not to compare with that given by cancer. A pink tint of more or less depth will occur when blood is in the urine from any cause; also in the urine of persons having malaria, "tick-fever" or Babesia, the several infections due to spirillum, "hookworm" and other intestinal parasites, as well as the primary and secondary anæmias; but none of these gives a color comparable with that from the urine of a cancer patient, and should be readily eliminated.

LOUIS GROSS.

O'Neil, R. F., and Hawes, J. B.: Remarks on the Rational Treatment of Genito-Urinary Tuberculosis. *Boston M. & S. J.*, 1913, clxix, 492.
By Surg., Gynec. & Obst.

An original article, in which the authors wish to emphasize the fact that the best results in genito-urinary tuberculosis can only be obtained by supplementing any indicated operative procedures by long-continued observation and treatment. The methods in use at the Massachusetts General Hospital at the present time are described with the results obtained and some suggestions as to operative technique.

In non-pulmonary tuberculosis the operation is but an incident in a course of treatment by far the most important parts of which come before and after the operation. The surgeon can rarely remove all of the disease, the aim being to render the condition of the local lesion as favorable as possible for cure, which can only be obtained by long supervision and treatment.

This after-supervision is provided for at the Massachusetts General Hospital by what is known as the Tuberculin Department. The clinic is held once a week and is composed of patients principally from the male and female surgical and genito-urinary departments. All new patients are given a careful physical examination to rule out pulmonary involvement, and a record of weight, pulse and temperature is made. They are then referred to the Social Service Department (without which or its equivalent no such clinic could exist) with the request, "Please examine home conditions and report." The needs of the case are taken up with the social worker, who looks out for food, fresh air, housing condition, etc. Every effort is made to gain the

confidence of the patient and the reasons for all treatment are explained.

Tuberculin is given in most cases, according to Trudeau's rule, a bouillon filtrate supplied by Baldwin of the Saranac Lake Laboratory being used. It is administered once a week, the initial dose being .0001 to .0005 mg. This is gradually increased to 50 or 100 mg., the clinical signs of reaction, local focal, or constitutional, being carefully observed. These latter have been rare and no untoward results have followed. Patients are urged to return once a week, and as the conditions improve the interval is lengthened. Pulse, weight, and temperature are taken each time, and if there is an occasion a chest examination is made. With the exception of oil of sandali for frequent and painful micturition, drugs are rarely used. If the patient is under weight, one quart of milk a day is added to the diet.

As to results, at the time of writing there were 24 cases of renal tuberculosis where nephrectomy had been performed, which had been under observation for a varying length of time. One case developed pulmonary tuberculosis and left for home in Sweden in poor condition. Another had a tubercular wound, genital tuberculosis, and pulmonary chest involvement 15 months after operation. The others all showed improvement in weight, general health, and urinary symptoms, some to a very marked extent. Nine of the sinuses closed within a few weeks; some remained open several months. Of late we have adopted the suggestion of the Mayos, to close the nephrectomy wounds without drainage after filling them with salt solution. Five of these were so treated. One had a superficial hæmatoma; the other four healed by first intention. There were also under observation a number of cases of genital tuberculosis, nine of which have been operated on for unilateral or bilateral tuberculous epididymitis. Most of these cases also show an improvement, but it is naturally not so striking as in the renal cases. The authors do not attribute the improvement shown by these patients to tuberculin alone. They do think, however, that it helps the genito-urinary cases. There can be no doubt of the psychic value

of the treatment for which the patients will return, thus enabling them to be kept regularly under observation for a longer time than would otherwise be the case. They regard the good results as due to the judicial combination of surgery, hygiene, tuberculin, and consideration of the patients' needs.

Beer, E.: The Use of Tuberculin in the Diagnosis of Obscure Conditions in the Genito-Urinary System. *Med. Rec.*, 1913, lxxxiv, 650.

By Surg., Gynec. & Obst.

The author again calls attention to the importance of the use of tuberculin as a diagnostic aid, and deplores the fact that this important test is not more generally in use, particularly to clear up the more obscure cases of renal, prostatic, and testicular disease, in which the tuberculin definitely assists in making a diagnosis. He quotes the statistics of Voges, who noted only 2.7 per cent errors in 7327 cases. In Beck's series of 2508 cases, of which 371 were clinically tuberculous, all were positive to the tuberculin test. Neisser reports all tubercular cases positive in his experience. In Moeller's 8000 sanitarium cases a positive reaction was present in 90 per cent. However, the author wishes to make it clear that certain cases of tuberculosis may not react to tuberculin. Mohr thinks a negative response excludes tuberculosis, but Beer takes exception to this in the following statement: "A general plus a local response is practically invariably due to a focal tuberculosis, and such a response locates the diseased area. A general minus a focal response is of no practical value, as the most careful examination cannot exclude tuberculosis in other parts, which may give the general reaction."

The author does not recommend the use of tuberculin as a routine procedure in genito-urinary diseases, as he appreciates the fact that occasionally, particularly in a large series of cases, unfavorable reactions may follow, especially if the dosage is not carefully guarded and the preparation not scrupulously careful. He then cites three interesting cases at length, which will be of value to those interested in this subject.

I. S. KOLL.

SURGERY OF THE EYE AND EAR

EYE

Coats, G.: Anterior Ring of Opacity in Lens, Following Contusion. *Ophth. Rev.*, 1913, xxxii, 295.
By Surg., Gynec. & Obst.

The case reported is that of a boy 12 years old, examined eight days after being struck in the eye by a piece of clay. There was no external wound, but hemorrhage in the aqueous humor, with ciliary and conjunctival injection. With transmitted light a small ring was seen on the anterior surface of the lens near the center, made up of very fine granules. The outer border was sharply delimited, the inner less so. The ring was only faintly seen with oblique illumination and appeared to have a brownish color. The opacity soon cleared and vision returned to normal.

The description is characteristic of what is termed Vassius' contusion ring, 23 cases of which have been reported. Vassius considers the condition an impression of the pupillary margin on the anterior surface of the lens, it being either a change in the superficial layers of the lens or a deposit of pigment granules squeezed out of the pigment epithelium of the iris. It has been supposed that this center of the cornea is doubled in and actually forces the iris against the lens, but the author considers that it is simply the sudden increase in intra-ocular pressure which presses the iris against the lens.

EARLE B. FOWLER.

Gradle, H. S.: A Hitherto Undescribed Anomaly of the Macular Retina. *Ophth. Rec.*, 1913, xxii, 591.
By Surg., Gynec. & Obst.

Gradle reports three cases of an anomaly of the macular retina which has hitherto been undescribed. The condition seems to be in the nature of a congenital malformation, not affecting visual acuity, and certainly it is not pathological.

The ophthalmoscopic picture is alike in all three cases, although of varying degree. In an otherwise normal eye, the fovea is comprised of a slightly oval area, about the size of the disc, of a dark red color, speckled with fine red points. In the center is an exceptionally well demarcated, discoid, yellowish white foveal reflex. The dark red fovea is surrounded by a grayish red zone, sharply demarcated on the foveal side and gradually fading into the surrounding normal fundus toward the periphery. The foveal edges are clean cut and seem to be as perpendicular as are the edges of a glaucomatous cupped disc. The papillo-macular artery, in passing through the light zone, is hazy, but reappears sharp at the edge of the fovea, bends backward and becomes lost in the depths of the macula. The floor

of the fovea is uniform and seems to be about one-third of a millimeter deeper than the surrounding lighter zone. It can easily be seen that this zone is composed partly of vague restless light reflexes and partly of a delicate grayish opacity situated in the innermost layers of the retina. The rest of the fundus is normal.

The explanation of this condition seems to lie in an abnormal thickness of the retina immediately around an otherwise normal fovea. The clivus is unusually abrupt and the nerve fiber and ganglion-cell layers are in all probability unusually thick.

Sym, W. G.: Detachment of the Retina Produced by General Edema. *Ophth. Rev.*, 1913, xxxii, 293.
By Surg., Gynec. & Obst.

The case reported is that of a girl 19 years old, in the last weeks of pregnancy, with an albuminuria and general oedema. Vision was reduced and the fundus was only slightly pale with a whitish oedema of the retina. The patient developed eclampsia a few hours after examination and was delivered of a full-term child. Three days later there was still marked general oedema and at this time a large globular detachment of the upper part of the retina in both eyes. Three days later this had become re-attached and vision was rapidly improving.

EARLE B. FOWLER.

Pischel, K.: Sclero-Corneal Trephining for Glaucoma. *Calif. St. J. Med.*, 1913, xi, 397.
By Surg., Gynec. & Obst.

Pischel reviews the Elliott operation for glaucoma. He has performed trepanation nineteen times on fifteen eyes in nine patients, the result being:

Visus: Better in 6 cases; the same in 3 cases; worse in 3 cases. In three cases amaurosis existed before the trepanation.

Field: Larger in 7 cases; the same in 2 cases; smaller in 1 case. In five cases the field could not be taken.

Tonometer reading: Lower in 14 cases and the same in 1 case.

Pischel uses the trepan (he believes the word "trephine" not the correct one) in a dental engine, and uses a guard to prevent it from entering too deeply.

C. G. DARLING.

Wyler, J. S.: The Trephining Operation in Glaucoma. *Lancet-Clin.*, 1913, cx, 432.

By Surg., Gynec. & Obst.

Wyler takes up, first, the technique of Elliot's trephining operation for increased tension, emphasizing the splitting into the corneal layers, without "button-holing" the flap, so as to make the opening

far enough forward. He advocates a longitudinal split in an iris, that may prolapse, rather than an iridectomy.

The advantages as summed up are: 1. Ease with which the operation can be performed. 2. Complications are rare. 3. Danger of infection is slight. 4. In most cases a round pupil remains and myotics may be used later. 5. Astigmatism is a negligible quantity. 6. Present statistics show the percentage of results superior to any one single method.

The author described cases of different types on which he has performed this operation.

EARLE B. FOWLER.

EAR

Lothrop, O. A.: Furunculosis of the External Auditory Canal; The Use of Alcohol as a Valuable Aid in Treatment. *Boston M. & S. J.*, 1913, clxix, 645. By Surg., Gynec. & Obst.

The pathology of furuncles of the external auditory canal is the same as that of boils on other parts of the body. They are caused by infection of the hair follicles, and persons are often predisposed to them by a middle-ear discharge, picking or scratching the ear, by the removal of cerumen, and by sea bathing.

The usual treatment consists of hot douches, wicks of carbolized glycerine, and one or more incisions in the canal. The main object of the treatment advocated by the author is the constant disinfection of the canal and the pus, thus preventing a reinfection. The treatment consists of the incision of any ripe furuncle, the thorough cleansing of the

ear canal, and the insertion of a gauze packing almost to the ear-drum and completely filling the canal. This gauze is kept moist by frequent applications of alcohol or alcohol and boric acid. The chief advantages claimed for this method by the author are that reinfection of neighboring hair-follicles is often prevented and that cases in the very early stages are sometimes aborted.

J. H. SKILES.

Dench, E. B.: Report of Three Cases of Otitic Meningitis Treated by Drainage of the Cisterna Magna. *Laryngoscope*, 1913, xxiii, 944.

By Surg., Gynec. & Obst.

Dench, speaking of the operation of draining the cisterna magna for the relief of meningitis, gives Cunningham credit for first describing such an operation, and Haynes the credit of perfecting the technique of the operation from which much has been hoped. He relates three cases in which he performed the Haynes operation, and though there was apparent improvement for a few days following the operation, the cases terminated fatally.

Quoting directly, his conclusion from these three cases follows: "It would appear that we have not yet discovered a surgical procedure which will enable us to combat successfully that dread disease, otitic meningitis. I do not mean to condemn the operation from the results obtained in such a small number of cases. I have nothing to add regarding the technique of the operation, and believe that the procedure should be given a thorough trial, but the results obtained from my limited experience have certainly not been encouraging."

H. BEATTIE BROWN.

SURGERY OF THE NOSE, THROAT, AND MOUTH

NOSE

McKenzie, D.: Sinusitis Exulcerans of the Frontal Sinus; Operative Trauma of the Dura; Recovery. *Proc. Roy. Soc. Med.*, 1913, vi, Laryngol. Sect., 182. By Surg., Gynec. & Obst.

The author reports a case of frontal sinusitis with supra-orbital swelling but absence of nasal discharge which required a series of four operations before the sinus was obliterated. During the first operation the periosteum elevator plunged through very thin anterior and posterior walls, injuring the dura and liberating a sinus full of pus. The 3 mm. dural tear was exposed and enlarged until cerebrospinal fluid flowed freely and a gauze drain was inserted. At the second operation six weeks later, when a modified Killian operation was done, the dural tear was healed.

ELLEN J. PATTERSON.

THROAT

Gougerot, H., and Quellien, P.: Primary Sporotrichosis of the Pharynx, a New Form of Sporotrichosis of Mucous Membrane; Diagnosis, Treatment, and Importance (Sporotrichose pharyngée primitive, forme nouvelle de sporotrichoses des muqueuses: diagnostic, traitement, importance médicale). *Paris méd.*, 1913, xxxvi, 236. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

A woman of 51 living in the country had never been sick. Yet she showed signs of hereditary syphilis, although she had never been suspected of having tuberculosis. Upon complaining of disagreeable sensations in the throat and difficulty in swallowing, her physician made a diagnosis of granular pharyngitis and advised iodized compresses. Her condition, instead of improving, grew worse slowly. The posterior pharyngeal wall showed a large ulcerated surface with irregular edges, which extended to the right posterior pillar, to within 5 or 6 mm. of the left posterior pillar, extended upward to the fossa, and a narrow projection ran downward toward the œsophagus. The bottom of the ulcer was grayish and exuded a serous fluid resembling mucopus. The glands were not involved, the submaxillary glands being scarcely perceptible, and the most careful examination did not show any other lesion of the skin or of the mucous membrane. The viscera were normal.

Another specialist believed it was tuberculosis. Finally one of the authors decided it was a mycosis. Not having any culture tubes he tried the iodide treatment as a test, and in six weeks the patient had completely recovered.

This case shows the seriousness of infiltration with sporotrichosis when it is not stopped by proper

treatment, and its tendency to ulceration in the late stages; but it also shows that if treatment is not begun too late and the iodide treatment is well borne, recovery is as rapid and complete as in cutaneous sporotrichoses.

This case is also a new clinical type; it is the first case reported of primary pharyngeal sporotrichosis without cutaneous lesions. The two cases heretofore published have been bucco-pharyngeal or laryngeal sporotrichosis with scattered cutaneous lesions that aided in the diagnosis.

This patient lived in the country and probably had infected herself from vegetables contaminated with sporotrichia. She either ingested them with insufficiently cooked vegetables or in chewing grass blades. For a greater or less length of time the sporotrichium remained in the bucco-pharynx, increasing the virulence and sensitizing the organism with its secretions. Finally it established itself on the mucous membrane and gave rise to the local lesion.

The authors conclude that although there are secondary sporotrichoses of the pharyngeal, laryngeal, nasal, or ocular mucous membrane, in the great majority of cases of sporotrichosis of mucous membrane the point of entry is from a conjunctivitis, angina, pharyngitis, laryngitis, or rhinitis.

J. DUMONT.

Bar, L.: Bacteriology of Primary Acute Œdema of the Larynx (De l'œdème aigu inférieur primitif de larynx et de ses relations microbiologiques). *Ann. d. Maladies de l'oreille*, 1913, xxxix, 30.

By Journal de Chirurgie.

Bar reports two cases of acute œdema which, in many of their symptoms, simulated the erysipelatous laryngitis described by Massie. There was an initial chill, a series of slight chills, submaxillary adenopathy with pain in the region, febrile condition with sudden defervescence, oscillations in the temperature varying in degree and recurring with each attack of œdema, and attacks of œdematous inflammation ambulatory in type. In the first case bacteriological examination showed very numerous pneumococci, staphylococci, some streptococci, and spirilla. No bacteriologic examination was made in the second case. The presence of streptococci is another point of resemblance to erysipelatous laryngitis, but the author recognizes the importance of pneumococci, staphylococci, and spirilla and their various associates in the causation of infectious œdema of the larynx. From the therapeutic standpoint he reports that polybacterial serum therapy has not yet demonstrated its efficacy, and he still holds to antiseptic methods.

G. LAURENS.

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INTERNATIONAL ABSTRACT OF SURGERY

MARCH, 1914

MONTHLY COLLECTIVE REVIEW

THE PRESENT STATUS OF THE RÖNTGENOLOGY OF GASTRIC AND DUODENAL ULCER IN AMERICA

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THERE is probably no subject before the medical world, to-day, of more absorbing interest than that of utilizing the röntgen rays as an aid in the diagnosis of gastro-intestinal diseases and certainly of the various lesions in which bismuth-X-ray methods are proving of value; the greatest attention of recent days has been focused upon the detection of ulcers in the stomach and duodenum and their sequelæ. While the original work in this field was instituted abroad and the principles laid down by foreign teachers were accepted by Americans as a working basis, the considerable amount of work done in this country during the last three or four years, and especially during the last year, has developed an experience among individual American workers which guarantees their ability as competent observers and has materially added to the sum of our knowledge of the subjects. Not only have superior technical methods been developed, but new radiological facts have been established, and the significance of radiological signs, previously in doubt, has been determined. In this particular field, however, there has continued to exist a wide difference in working methods, and in the significance attached to several demonstrable points, so that it seems justifiable at this time to review the recent records with the idea of obtaining a composite point of view, particularly of subjects or methods on which there is a divergence of opinion. Such a review should aid the general reader in obtaining a conception of the

present status of the röntgen method as applied to ulcer; it should aid the beginner in developing a system for his work; and it should act as a warning to the casual observer that the subject, as a whole, awaits definite settlement.

American writings on this subject are of comparatively recent date, and are not so profuse but what a brief search in the library brings one into touch with them all. The method followed in this review is to dissect or analyze all available articles which go into detail, and regroup chosen excerpts from various authors, under topical headings which appear quite constantly in all the texts. An attempt has been made to include enough of each author's statements to make his meaning clear and to avoid distorting his ideas by taking them out of their setting. To note each observer's method of handling the subject and to obtain the fullest significance of these excerpts, one must refer, of course, to the original articles, a bibliography of which is appended to this review.

GENERAL VALUE OF THE METHOD

How constantly, in ulcer cases, can we elicit X-ray findings which are of relative or absolute assistance in arriving at a diagnosis? How early in the course of the disease will these X-ray findings appear? Will this depend considerably upon the location of the ulcer? Can we obtain more valuable data in cases of simple erosion or in cases where deformative conditions have re-

sulted? Is the röntgen method of more value in gastric or in duodenal ulcer? What is the significance of negative findings in gastric and in duodenal ulcer? Are the findings in ulcer cases sufficiently distinctive in their character to allow a differentiation from cancer and other conditions to be made by this method alone? What can we learn from our X-ray study which would be of value to the surgeon in planning an operation?

The following selected excerpts give answer to some or all of these queries:

CARMAN: "At the Mayo Clinic, since instituting the röntgen method as a routine, 93 per cent of cases of ventricular cancer have presented changes recognizable by X-rays. In gastric ulcer the radiological diagnosis is less certain, but, even here, approximately 65 per cent show diagnostic signs, and this percentage will probably be materially increased in the future. Notwithstanding the numerous cardinal and suggestive radiological signs of gastric ulcer, there is a small percentage of cases in which these signs are either absent or too indefinite to support a diagnosis. This is especially true of non-perforating ulcers in the pars pylorica and on the anterior and posterior walls, and the shallow or superficial ulcers which are of relatively frequent occurrence. At present none of the röntgen-ray signs of cancer or ulcer is pathognomonic."

PFAHLER: "The evidence of duodenal ulcer, as shown by the röntgen rays, is in a developmental stage, and, while important, it is of less definite value than that obtained in gastric ulcer. (1) Gastric ulcer gives very positive evidence, as shown by the röntgen rays. (2) In many cases its character and location can be determined. (3) The location and character of the ulcer will give a very definite idea as to the treatment; when surgical, the character of the operation can be more definitely decided upon—whether a gastro-enterostomy, pylorotomy, or local excision. If a gastro-enterostomy is decided upon, the lowest point of the stomach can be determined by the rays, and thus the best drainage may be obtained. (4) Some evidence of duodenal ulcer can be found. (5) The history and other clinical evidence should be considered together with the X-ray findings, in order to arrive at an accurate diagnosis."

LEONARD: "The diagnosis of gastric ulcer by the röntgen method is one of its greatest advances. The accuracy and fallacy of this diagnosis vary inversely with the extent to which the stomach has been involved in the pathological process. Simple ulcer involving only the gastric mucosa is the most difficult to diagnose; diffuse callous ulcers of the florid type are almost as difficult; penetrating ulcers, that involve the muscular wall of the stomach, can be recognized in a much larger percentage of cases. Perforating ulcers of the callous type can be detected in the majority of cases when proper technique is employed. Callous ulcers, with or without perforation, that have produced contractions of the stomach-wall present the picture of benign hour-glass contraction and are easily recognized."

CASE: "In the great majority of cases the X-ray examination is likely to prove of great value, especially when the findings are carefully studied in connection with other clinical data, and differentiation between pyloric and duodenal or gall-bladder lesions is frequently made possible; although in certain cases, especially those of simple pyloric or duodenal ulcer, the X-ray findings

may not be significant of anything other than the normal.

"In the present stage of development we are not justified in believing that the röntgen method of gastric examination constitutes an early method of detecting gastric or duodenal ulcer."

COLE: "The negative or positive diagnosis of post-pyloric ulcer by serial radiography is equally as accurate as the radiographical diagnosis of renal or ureteral calculus."

GEORGE: "The röntgen diagnosis of duodenal ulcer has not kept pace with the improvements in the diagnosis of gastric conditions by this method, in spite of the fact that the frequency of duodenal ulcer is much greater than that of gastric ulcer. This is largely due to the fact that the fluoroscopic method has been too exclusively employed in the study of the duodenum, heretofore."

"By the method of serial röntgen plates advised by Cole, where the proper technique is employed to bring out the duodenum—especially the lateral view—we are able to state positively whether the duodenum is anatomically normal or pathological. By this method we cannot always distinguish between the effects of adhesions or cicatrix, when both are due to old duodenal ulcer. We can, however, distinguish between adhesions due to duodenal ulcer and those due to gall-bladder disease. By this method we can be more positive of the diagnosis of duodenal ulcer than we can be of most gastric conditions, as the possibilities of error are not so numerous. A negative result with the serial plate technique and method is as satisfactory as a positive one, as it effectively rules out the presence of surgical duodenal ulcer."

"Of 125 operated cases, 59 were found to have duodenal ulcer, either alone or complicated with gastric ulcer or with other conditions. In every one of these cases, except three, a pre-operative röntgen diagnosis was correctly made of duodenal ulcer or adhesions from ulcer."

EASTMOND: "In the final analysis the X-ray diagnosis of ulcer of the stomach and duodenum is not and often cannot be made from the detection of any one point of evidence, but is deduced from a study of all the pathologic lesions and changes in function presenting to the röntgenologist. One single feature may give rise to a suspicion, but it is a study of the whole that establishes the diagnosis."

FRIEDENWALD and BAETJER: "While the authors do not believe that this method is as yet sufficiently well developed to be relied upon alone, yet they are confident that it often offers most valuable assistance as an aid in diagnosis, of quite as much practical value as any of the important symptoms of the disease, and, taken in connection with other signs, is of the greatest diagnostic help. Curiously enough, the diagnosis of duodenal ulcer is much simpler than that of gastric ulcer. One can practically always rule out the presence of a duodenal ulcer, but one cannot always rule out the presence of gastric ulcer. From their studies the authors have drawn the following conclusions:

1. "The X-ray offers most valuable assistance as an aid in the diagnosis of peptic ulcer; and although this method is not yet sufficiently well developed to be relied upon alone, without entering into the clinical aspect of the disease, it is of the greatest diagnostic help in obscure cases.

2. "In duodenal ulcer there is an excessive hypermotility of the stomach, with rapid evacuation of the contents, so that the greater portion of the gastric contents is emptied within the first half-hour; there is hypermotility of the duodenum with formation, usually, of a vacant area, which remains fixed in all of the examinations.

3. "The diagnosis of gastric ulcer can only be made in certain situations; that is, when the lesion is situated on the anterior surface of the stomach and along the anterior surface of the lesser curvature. There is in this condition an excessive irritation from the ulcer, with a constant hypermotility and a spastic condition of the pylorus, so that for the time being there is practically no expulsion of the bismuth. It is only when the spasticity relaxes that a portion of the bismuth is expelled. In gastric ulcer, whatever its situation, we can always look for retention of contents. In certain instances there is a vacant area in the pylorus; there is frequently a tendency to hour-glass formation.

4. "The X-ray affords an almost absolute means of differentiating between gastric and duodenal ulcer.

5. "By means of the X-ray we can positively rule out the presence of a duodenal ulcer.

6. "We can determine approximately the degree of healing of an ulcer, which cannot be as certainly determined in any other way."

CHIEF DEPENDENCE PLACED UPON FLUOROSCOPY OR RADIOGRAPHY

The following paragraphs show a wide difference in working methods used to obtain the same final data. While the most common practice includes a variable combination of screen observations and radiographs, a portion of the writers would practically dispense with the use of plates and depend on screen findings alone. Others, in an attempt to improve the accuracy of their findings, make screen observations only for the purpose of locating the exact field under suspicion and depend for their deductions on a multiplicity of radiographic plates.

LEONARD: "There is no question as to which of these methods should be employed in the study of the gastro-intestinal tract. Both have their advantages, and both their sphere of applicability. Serial radiograms possess the great value of studying the varying phases of the passage of bismuth meal out of the stomach and through the consecutive portions of the gastro-intestinal tract."

CASE: "The X-ray examination is essentially fluoroscopic, röntgenograms being made only when required for purposes of record or comparison and when gall-stones are suspected."

CARMAN: "Both fluoroscopic and plate methods are used in the study of gastric ulcers. No marked preference is given to either one, as the information obtained by each is somewhat different in character. These methods, therefore, are not in competition, and both are used in routine in every case. Most of the data, however, are obtained during the screen examination, two or more subsequent plates acting as a check-up for confirming or amplifying the data previously obtained. Our total screening time for a patient very rarely exceeds five minutes, because lesions revealed by the röntgen ray are relatively gross, are readily seen, and appear quickly or not at all."

COLE: "The method of diagnosing post-pyloric ulcer, employed by the author in 500 cases, is based on the recognition by means of serial radiography of a constant deformity of the cap or sphincter, caused by the induration or cicatricial contraction surrounding the crater of an ulcer. These findings can only be recognized by studying individually and collectively a large series of plates, and

either matching them over each other or reproducing them cinematographically. Where a positive diagnosis, usually of extensive lesion, can be made by röntgenoscopy, serial radiography is unnecessary; but in all doubtful cases serial röntgenography is absolutely essential before one is justified in making a negative diagnosis of gastric or duodenal ulcer or carcinoma."

GEORGE: "We have employed the method of serial röntgen plates, as first emphasized by Cole of New York. Plates are made at once, after ingestion, and at short intervals throughout the first hour. Most of the recent advances in gastro-intestinal röntgen diagnosis have, of course, been made in laboratories where the fluoroscopic method was largely if not exclusively used. The wonderful results achieved in the field of gastric diagnosis seemed sufficient reason for using the same methods in the study of the duodenum. The results, however, have not afforded any startling support for this idea. In questions of fixation of the duodenum by periduodenitis, the fluoroscope does play an important part."

SKINNER: "The most successful exponents of radiography require the fluoroscopic screen to judge the correct time for the radiographical exposures. But why take the time, expense, and inconvenience of the radiograph?"

SYMPTOM-COMPLEX AS OUTLINED BY HOLZKNECHT

Before proceeding to any recent American classifications, let us review a number of symptoms-complex given out by Holzknecht in November, 1911. These symptom groups include some clinical as well as radiological signs, and were found to be the most constant evidences in a large number of cases of verified stomach disease. They were presented as outlines for study only and are not presumed to be comprehensive:

Symptom-Complex I

1. Bismuth residue after six hours.
2. Normal stomach shadow on the screen.
3. Achylia.

Diagnosis — Small carcinoma of the pylorus.

Symptom-Complex II

1. No residue after six hours.
2. Marked defect in gastric shadow.
3. Horn-shaped stomach.

Diagnosis — Carcinoma. No stenosis. Inoperable.

Symptom-Complex III

1. No residue after six hours.
2. Marked defect of the stomach shadow in the pars media or pars pylorica.
3. Horn-shaped stomach.

Diagnosis — Carcinoma of the stomach. Operable.

Symptom-Complex IV

1. Small residue after six hours.
2. Sensitive pressure-point over the stomach.
3. Normal stomach shadow.

Diagnosis — Simple gastric ulcer.

Other symptoms confirming this diagnosis are:

1. Antiperistalsis.
2. Displacement of the pylorus upward and to the left.
3. Snail form of the lesser curvature.
4. Stable transverse contraction.
5. Changing transverse contraction.

Symptom-Complex V

1. Small bismuth residue after six hours.
2. Pressure-point.
3. Displacement upward and to the left.
4. Snail form of the stomach shadow.

Diagnosis — Old contracting ulcer on the lesser curvature of the pars pylorica.

Symptom-Complex VI

1. Small bismuth residue after six hours.
2. Pressure point and resistance in the pars media.
3. Transverse contraction of the pars media.
4. Diverticulum without air-bubble in the smaller curvature; immovable.

Diagnosis — Callous ulcer of the pars media.

Symptom-Complex VII

1. Large sickle-shaped bismuth residue after six hours.
2. Dilatation.
3. Loss of tone.

Diagnosis — Old stenosis of the pylorus due to ulcer.

Symptom-Complex VIII

1. Large sickle-shaped residue.
 2. Marked defect in the filling of the pars pylorica.
- Diagnosis — Carcinoma on the base of an old ulcer, with stenosis.

Symptom-Complex IX

1. No bismuth residue after six hours.
 2. Marked defect in the shadow of the pars pylorica or pars media.
 3. Transverse constriction of the greater curvature.
- Diagnosis — Carcinoma on the basis of an old ulcer. No stenosis.

Symptom-Complex X

1. Stomach empty after six hours. Head of the bismuth column in the splenic flexure of the colon.
 2. Shortening of the stomach.
 3. Contraction of the cardia.
- Diagnosis — Carcinoma of the pars cardiaca.

Symptom-Complex XI

1. Stomach empty in six hours. Head of bismuth column in the ascending colon.
 2. Stomach shadow normal.
 3. Pressure-point moving with the duodenum.
- Diagnosis — Ulcer of the duodenum.

Symptom-Complex XII

1. Stomach empty after six hours. Head of the bismuth column in ascending colon.
 2. Stomach shadow normal.
 3. No increased peristalsis. No antiperistalsis.
 4. No sensitive pressure-point.
 5. Hydrochloric acid normal.
- Diagnosis — Normal stomach.

EVIDENCES OF GASTRIC ULCER

It is of prime importance to note carefully the classification of ulcer signs given out by an author, for such an outline not only includes a summary of the signs included in his diagnostic complex, but shows their interrelation and comparative importance. These outlines from recent American literature, standing alone, are not intended to be taken as a formula for X-ray diagnosis,

but to show the author's point of view in handling the subject. The classification follows:

Pfahler's Classification of Ulcer Signs

1. Evidence of perforation.
 - (a) A projecting shadow outside of the gastric shadow.
 - (b) A gas-bubble lying above this collection of bismuth.
 - (c) Perigastric adhesions or involvement of other organs.
 - (d) A palpable tumor connected with the stomach, but not affecting the lumen.
 - (e) The above may be associated with either an organic or spasmodic hour-glass contraction of the stomach.
 - (f) Retention of the bismuth in the ulcer after the remainder of the stomach has been emptied.
 - (g) Resistance corresponding to the projecting shadow.
2. Evidences of irritation, due either to a florid ulcer or to an irritable scar of an ulcer.
 - (a) Spasmodic contraction.
 - (b) Retention of food beyond six hours.
 - (c) Painful pressure-point corresponding to the location of the ulcer.
 - (d) Normal outline of the stomach.
3. Secondary effects usually associated with a callous ulcer.
 - (a) Pyloric stenosis and gastrectasis.
 - (b) Fixation.
 - (c) Organic contraction, hour-glass.
 - (d) Interference with peristalsis.
 - (e) Reversed peristalsis.
 - (f) A contracted lesser curvature with retraction of the pylorus toward the left.

Ulcer Signs as Outlined by Carman

1. Signs which are cardinal and more or less pathognomonic.
 - (a) Visualization of the bismuth-filled crater of a callous ulcer — the nischen symptom.
 - (b) The diverticulum of perforating ulcer.
 - (c) The incisura.
2. Signs which are not determinative but merely suggestive of ulcer.
 - (a) Acute fish-hook form of the stomach, with displacement to the left and down.
 - (b) Delayed opening of the pylorus.
 - (c) Localized pressure-tender point on the lesser curvature.
 - (d) Residue in the stomach after six hours.
 - (e) Lessened mobility.
 - (f) Settling of the bismuth to the lower pole of the stomach, as is seen in hypotonicity or atony.

Ulcer Signs as Viewed by Lockwood

- (a) Bismuth residue in the stomach six hours after the meal. May be due to spasm, tumefaction, or slight cicatrix at the pylorus, or to atony.
- (b) A displacement of the pylorus upward and to the left. With ulcers on the lesser curvature.
- (c) Hour-glass contraction that appears in all of a series of plates is suggestive of old cicatrizing ulcer.
- (d) Distortion or displacement of the stomach by adhesions is suggestive.
- (e) A small puckered area in which the rugæ are distorted, particularly when associated with a coincident pain-pressure point.

- (f) Clinical or radiographic evidence of hypersecretion.
- (g) Reversed peristalsis, indicating extreme spasticity.
- (h) Radiographic findings of ulcer, involving the patency of the pyloric canal, resulting in stenosis.

Case's Classification of Ulcer Signs

1. Definite X-ray evidences of ulcer (stomach and duodenum).
 - (a) Bismuth flecks representing ulcer craters filled with bismuth.
 - (b) Filling defects or abnormalities in the stomach shadow.
 - (c) Organic deformities of the stomach other than filling defects.
2. Inferential evidence.
 - (a) Spastic manifestations.
 - (b) Abnormalities of peristaltic waves.
 - (c) Abnormal emptying time of the stomach.
 - (d) Unusual filling of the duodenum.
 - (e) Pressure pain-points.

INDIVIDUAL EVIDENCES OF GASTRIC ULCER

I. Pyloric Stenosis and Gastrectasis

Pyloric stenosis caused by ulcer leads to a gradual dilatation of the stomach, except in those cases, as pointed out, where a hypertrophy of the gastric walls is able to compensate for a moderate obstruction at the outlet. From the following paragraphs a lucid idea may be gained of the radiographic picture seen in the atonic, dilated stomach.

PFÄHLER: "Pyloric stenosis is commonly due to a contraction resulting from a callous ulcer with which is associated a progressive dilatation of the stomach. This is recognized by its size and by the retention of food. This retention gives a characteristic basin-like shadow at the lower pole of the stomach."

LEONARD: "In uncompensated stenosis of the pylorus the residue is broader and drawn out in the form of a crescent, and extends to the right and left of the median line, while the shadow of the bulbous duodeni is far to the right."

CARMAN: "A hypotonic condition of the stomach, with settling of the bismuth to the lower pole, while by no means constant in ulcer, is found sufficiently often to warrant its inclusion among the suggestive signs."

CASE: "Dilatation of the stomach of varying grades is a frequent finding in chronic gastric and duodenal ulcer. Marked gastric stasis without dilatation is suggestive of a malignant obstruction."

MILLS and CARMAN: "In non-obstructive ulcer, the stomach shows a degree of atony often unexpected from a consideration of the patient's habitus. In marked pyloric obstruction, the stomach occupies a wide central position if there be no compensatory hypertrophy of the gastric walls. This median position of the ectatic stomach is graphically shown in the position and form of the gastric residue, median in position and crescentic in outline."

EISEN: "The obstruction in the duodenum may be ever so marked, with very little change in the size of the stomach, while pyloric obstruction leads invariably to hypertrophy and, later, to dilatation and extension to the right with horizontal level."

COLE: "Pyloric obstruction causes unusually active peristalsis, generally of the three- or four-cycle type, which forces the chyme against the greater curvature at the pars

pylorica, dilating this portion and forcing it to the right, giving it the prognathous 'undershot' appearance of a bulldog's jaw. Such local dilatation indicates lack of compensation of this portion of the stomach, and calls for surgical procedure regardless of the cause of the obstruction."

II. Retention of Food in the Stomach

Aside from the delay in emptying caused by the organic obstruction due to ulcer, and aside from organic constrictions of the lumen of the stomach elsewhere, pylorospasm may or may not result in abnormal retention. This spasmodic delay is shown to result also from extraventricular causes, notably in disease of the gall-bladder and appendix. The absence of gastric stasis has been proven for many cases of gastric ulcer.

The six-hour limit for complete emptying is mentioned so frequently that it might be considered an accepted rule for all cases, were it not for the fact that the normal rate of emptying varies in different individuals from two to eight hours, depending upon the habitus of the individual and his attendant type of stomach. It is presumable, therefore, that in the more atonic types of stomach a delayed clearance must be discounted.

CARMAN: "Delayed opening of the pylorus following the administration of bismuth water, apart from actual pyloric obstruction, is almost invariably seen in ulcer of the stomach associated with hyperacidity. This delayed opening is also frequently seen as a reflex from disease of the gall-bladder or appendix. A residue from the six-hour meal may or may not be found in cases of ulcer. It has occurred in about 70 per cent of the cases we have examined so far. In our cases, six-hour residues were usually found with the perforating types of ulcer, but were rarely seen with callous or simple ulcers."

CASE: "Gastric, not pyloric, ulcer is not necessarily associated with delayed emptying, for in many gastric and duodenal ulcers the emptying time of the stomach, after a bismuth meal, is perfectly normal. In some cases bismuth has been found in the stomach 125 or 150 hours following the bismuth meal. Smithies has recently reported over a hundred cases of gastric ulcer without delay in the emptying time. Ulcer in the body of the stomach rarely produces delayed motility."

LEONARD: "In ulcers that lie in the pyloric canal or that neighborhood the diagnosis must be based upon the obstructive signs. The spasm of the pylorus is more marked. There is a decrease in the motility and a large residue of bismuth is left in the stomach after six hours."

LOCKWOOD: "Unfortunately there are some instances of pylorospasm secondary to chronic appendicitis or irritative lesions of the gall-bladder in which bismuth remains may be found in the stomach six hours after the meal."

PFÄHLER: "If not accompanied by tumor formation or in an otherwise normal stomach, retention of food in the stomach is one of our most valuable signs of acute or florid ulcer. With hyperacidity it is reasonable that each period of closure of the pylorus will be longer, and as a result the passage of the food from the stomach will be delayed. This spasmodic retention of the bismuth meal beyond six hours has been found when the ulcer is located high as well

as low. Retention of food beyond six hours rarely occurs in marked gastroparesis without ulcer."

MILLS and CARMAN: "So far as ulcer is concerned, delayed motility indicates either an organic pyloric obstruction or delayed clearance from non-compensated hyperacidity or hypersecretion."

III. Location of Ulcer by Painful Pressure-Point

Although most writers mention pressure sensitivity over the gastric shadow as significant of ulcer, especially where penetration has led to perigastritis, attention might well be directed to the detailed explanation of pain and tenderness in gastric ulcer, as set forth in Mills and Carman's original article. In it we find the reasons for certain pain phenomena, which seem confusing, if not paradoxical, without them. The following symposium gives varied opinions on this phase of the question:

PFÄHLER: "Painful pressure-point may at times be located. If it is found to lie over the stomach and to move with the stomach shadow, it points toward gastric ulcer."

CASE: "There is considerable value, in my opinion, in palpation over the gastric shadow, to localize the points of pain on pressure, but this pressure-pain point is not likely to correspond to the location of the ulcer unless there has been periduodenal or perigastric involvement with adhesions."

CARMAN: "The presence of a localized pressure-sensitive-point on the lesser curvature is not very trustworthy as an indication of ulcer at that point. Many persons who have no ulcer are sensitive to pressure in the epigastrium. Further, clinicians assure us that unless the parietal peritoneum is involved, as in penetrating ulcer, for example, visceral lesions are not particularly painful to pressure. However, such a tender point, if definitely localized, is entitled to consideration in the final summing up."

LEONARD: "A point of tenderness on pressure may be felt, corresponding to the position of the ulcer, when it is situated anteriorly."

LOCKWOOD: "A small puckered area in which the rugae are distorted is even more suggestive of ulcer, when the localization of the affected area coincides with that of local tenderness on palpation."

MILLS and CARMAN: "Ulcer of the stomach may exist and, in conjunction with it, a localized pressure-sensitive point. If such a spot be present it may fall entirely without the X-ray shadow of the stomach and at the same time no other cause than ulcer be present to account for its existence. A definitely localized pressure-point may exist that falls within the gastric shadow, yet operation may reveal an ulcer in a distant locality. The tender-point may coincide with the site of an ulcer as determined by the plate or screen, and subsequently, at operation, ulcer be found in a corresponding situation. The pain and tenderness due to gastric ulcer may originate from any or all of three causes: (1) General unlocalized pain, occurring at definite times after meals, is due to intragastric hypertension plus special irritability of the ulcer; (2) a localized area of pain or pressure sensitivity, as the result of a reflex; (3) irritation of the parietal peritoneum by perigastritis secondary to ulcer."

IV. Interference with Peristalsis

The study of motion in the stomach is accomplished most readily by the fluoroscopic method.

Abnormalities in peristalsis are most likely to be intermittent and to require repeated though brief observations to disclose them. At one or another of these screen examinations a hyperperistalsis may be found, and this is the preferred time to study the degree of elasticity of the stomach walls, the interruption of peristaltic waves, and the progress of food through the duodenum. This data may also be obtained from a suitably timed series of plates. The following authorities are quoted:

CASE: "When the depth of the peristaltic waves is increased, and when they appear more frequently than normal, the inference is that there is some obstruction at the gastric outlet. Peristaltic waves may at one moment be practically absent, and at other times so strong as to almost cut the stomach in two. It seems that this may represent periods of fatigue and periods of revived activity after recuperation from fatigue."

MILLS and CARMAN: "There are few inferences that we can draw from the variations of peristaltic motion; such as there are, are chiefly connected with obstructing ulcer of the pylorus. Ulcer of the pyloric portion of the stomach, if resulting in obstruction, may manifest itself by most marked hyperperistalsis at some time during gastric digestion, beginning high in the stomach, and characterized by increased size in the peristaltic bulgings and the fact that two or three such peristaltic waves may be in progress at the same time."

PFÄHLER: "Interference with the peristaltic waves will practically always be found when the ulcer is indurated. A wave may be seen on both curvatures, then be interrupted at the location of the ulcer, usually on the lesser, while at the same time it may be seen to continue on the greater curvature."

ELLIOTT: "In conditions associated with pyloric stenosis, the stomach may fairly writhe in its activity, whereas no motion at all may be observed during periods of rest."

EASTMOND: "If the ulcer is located at or near one of the curvatures of the stomach, usually the lesser, within the contracting part, there is absence of peristalsis at that point. It is an axiom that peristalsis is absent at the site of any pathological lesion of the stomach; consequently, it will be found that the affected area does not contract."

V. Reversed Peristalsis

There is still disagreement as to the frequency and significance of antiperistalsis. While it is a phenomenon which would seem easy to make out during screen examination, no two writers exactly agree as to its bearing on the question of gastric ulcer. Some English writers consider it of so extremely rare occurrence as to be practically useless as a diagnostic sign. Haudek, who has given this point a great deal of study and who originally considered it a sign of pyloric obstruction, has gradually broadened his view until now he considers it a definite sign of gross disease of the walls of the stomach or duodenum. He finds antiperistalsis with considerable frequency. The following show the various conceptions of this sign:

MILLS and CARMAN: "It is not common; and, in the cases observed by us, peristalsis has always originated at or below the ulcer level if indicated by an incisura even where this is quite low in the vertical stomach."

LOCKWOOD: "Fluoroscopy may show a reversed peristalsis, indicating an extreme degree of spasticity; this is suggestive, but not conclusive."

LEONARD: "Antiperistalsis is generally present in gastric ulcer."

PFÄHLER: "Reversed peristalsis occurs in connection with pyloric stenosis—more often with the organic stenosis, but may be seen in spasmodic stenosis of the pylorus. The waves of reversed peristalsis are of the same character as the direct."

CASE: "Antiperistalsis occurs with comparative rarity. Antiperistaltic waves are pathognomonic of an organic lesion near the pylorus and frequently point to ulcer. This phenomenon is best studied when the patient is lying supine."

ELLIOTT: "Antiperistalsis is frequently seen upon the fluoroscopic screen; the waves start in the antrum and disappear in the pars media. The exact significance of this phenomenon is not known; it frequently occurs in pyloric stenosis, but may occur independent of this condition."

VI. A Contracted Lesser Curvature with Retraction of the Pylorus to the Left

The several succeeding descriptions of this condition give the reader a concise picture of what is meant. This drawing of the pylorus to the left immediately suggests other mechanical conditions which displace the pyloric shadow, one of which is mentioned below by Cole.

PFÄHLER: "Retraction of the pylorus to the left is at times formed, and is likely due to the contraction of the lesser curvature caused by the disease."

CARMAN: "A hypotonic stomach of an acute fish-hook form, with displacement to the left and down, is not uncommonly associated with ulcer, as a result of scar contraction on the lesser curvature drawing the pylorus to the left."

LEONARD: "Since the favorite seat of callous ulcers is upon the lesser curvature, the contraction of their scar tissue gives rise to a shortening in the length of the lesser curvature. Haudek has pointed out that this gives rise to a dragging of the pylorus to the left, and has shown that a difference can be noted in the shape and position of the residue in the sinus and in its relation to the bulbous duodeni."

MILLS and CARMAN: "Perhaps crook-form would be more intelligible to us than snail-form, the stomach being apparently sharply bent on itself at the junction of vertical and pyloric portions. Carcinoma, strictly localized in the pyloric portion of the stomach, gives a somewhat similar picture, especially if the pars pylorica is obliterated."

COLE: "Extensive adhesions, involving the right side of the pars pylorica, drawing that portion of the stomach to the right and straightening out the greater curvature, the cap being of normal dimensions but angulated, and the sphincter being normal, suggest gall-bladder infection, with or without calculi."

VII. Perforating and Penetrating Ulcers of the Stomach

While much has recently been written in America on the subject of penetrating and per-

forating ulcer, the point of view and treatment is essentially in correspondence with Leonard's statement as given below. The extracts following are selected to show such minor differences as exist and to amplify the subject for the reader's benefit.

LEONARD: "The apparent rarity of the above mentioned ulcers is due to a lack of recognition rather than to the infrequency of their occurrence, as shown by Haudek, who first established their radiographic diagnosis. He has formulated their röntgenological symptom-complex and signs as follows:

"1. A diverticulum-like projection from the stomach shadow, usually on the lesser curvature.

"2. Movability of the bismuth mass by palpation.

"3. The persistence of a bismuth shadow at this point.

"4. A hemispherical collection of gas above this bismuth shadow.

"5. The constant and marked contraction of the greater curvature of the stomach, at a point opposite to the shadow, approximating in form an hour-glass contraction.

"6. A displacement to the left of the pyloric portion of the stomach, especially noticeable in males, with a perpendicular outline on the right border of the greater curvature.

"7. A retardation of motility, so that six hours after the ingestion of the bismuth meal a large amount remains in the stomach. This residue is placed to the left of the median line when the ulcer lies high.

"8. Antiperistalsis.

"9. The presence of an acutely tender spot, with a sense of resistance on pressure, in the epigastrium in the region of the left rectus muscle. This is frequently seen in ulcer of the body of the stomach.

"The symptom-complex for penetrating ulcer is the same as for perforating ulcer, except that the symptoms are less pronounced.

"It is of practical importance to remember that these ulcers, while occurring most frequently on the lesser curvature, may be found in the anterior and posterior walls. During the examination, therefore, the patient must be rotated from side to side in order to bring ulcers in these positions to the profile of the stomach shadow. Although perforating ulcers are frequently found in connection with an hour-glass contraction of the stomach, due to scar-tissue, they are as frequently found without any hour-glass contraction. The characteristic röntgen picture in penetrating ulcer varies markedly from that of perforating ulcer. Instead of the rounded diverticulum filled with bismuth and gas, there is only a slight bud or spur-like projection from the profile of the stomach shadow."

CASE: "One rarely finds a persistent bismuth fleck which can be proven to be a bismuth accumulation in the crater of an ulcer. The projecting shadow will be found to move up and down during respiration when the perforation is anterior in connection with the liver, but it will be immovable during respiration when the perforation and fixation have occurred in relation to the pancreas. This hour-glass deformity is usually partly spastic and partly organic, the spasm being due to gastric ulcer, the organic changes being due to perigastric adhesions."

CARMAN: "A bud-like projection from the contour of the bismuth-filled stomach (the nischen symptom) corresponding to the crater of a callous ulcer, is a definite and valuable sign. It will usually be on the lesser curvature when found, is rather easily recognized, and is not imitated, at least closely, by any other condition that I know of."

PFÄHLER: "Retention of bismuth in the bed of the ulcer after the stomach is empty may occur even when no projecting shadow is present. This is true when the ulcer is on the anterior or posterior wall. I believe ulcer cannot be directly shown unless perforation to a considerable degree has taken place."

VIII. Spasmodic Hour-Glass Contraction

Here, indeed, is a sign mentioned by all the writers, where confusion exists as to its cause and significance when applied to an individual case. While frequently found opposite an ulcer, and on this account considered of prime diagnostic import, statements included herein suggest frequent causes for this spastic notch other than the irritation of circular muscle fibers in continuity, and force us to reconsider the underlying method of its production. If, as suggested, it may frequently be the result of vagus irritations elsewhere, its importance in connection with gastric ulcer is correspondingly decreased. Even the effect of antispasmodics on these incisuræ is so inconstant that in an individual case the differentiation between the so-called pseudo-contractions, the purely spasmodic contractions, and the contractions partly spastic and partly organic, is difficult or impossible in an individual case. However, the relative frequency of the sign and the ease with which it is observed guarantee a more satisfying explanation of its bearing on gastric and duodenal ulcer in the near future.

CARMAN: "The incisura is an indentation of the greater curvature, usually in the vertical portion of the stomach, pars cardiaca, or pars media, of varying width and depth. Its production is believed to be due to the irritation of the ulcer, causing a spastic contraction of the circular muscle fibers in its plane; perhaps, in some cases, it is also due to infiltration and stiffening of these fibers. A true incisura is distinguishable from a peristaltic wave, not only by its depth, which is commonly greater than a peristaltic contraction, but also by the fact that it does not move pylorusward. It persists in spite of vigorous palpation and is not effaced after the administration of belladonna to the patient. False incisuræ occur not infrequently in which no ulcer or other organic lesion is found. They are probably due to spasm from reflex causes. In appearance they resemble true incisuræ, but they often move pylorusward, and usually disappear on palpatory manipulation or after the administration of an antispasmodic."

CASE: "A spastic localized indrawing of the greater curvature is often seen at the level of an ulcer in the stomach. It was formerly considered that this spastic indrawing was pathognomonic of gastric ulcer at the level of the spasm, but later experience has shown the incorrectness of this supposition. The writer reported sixteen operated cases in which such a spastic indrawing on the lesser curvature was proven by operation to be associated with well-marked duodenal ulcer, no gastric ulcer being found at the site of the indrawing. Among other conditions in which this sign has been noted and where anatomical proof has been afforded of the absence of ulcer on the lesser curvature

at the level of the indrawing, have been a number of cases of gall-stones, carcinoma near the pylorus, appendicitis, and Graves's disease. In fact, it seems that this spastic indrawing is a localized, especially deep tonic constriction of the stomach, the result of vagus irritation, and may be produced by any lesion which causes vagus irritation."

PFÄHLER: "Spasmodic hour-glass contractions commonly occur in connection with acute or irritable ulcers, even though there be no perforation, projecting shadow, nor retention of bismuth in the bed of the ulcer. Multiple deep, spasmodic constrictions, affecting both curvatures, may occur in neurotic subjects."

EISEN: "The rapid onward movement of these deep peristaltic waves, although they nearly divide the stomach's contents, cannot easily be confused with an intermittent hour-glass contraction, when examined fluoroscopically, although a radiograph may give this impression. Nevertheless, an intermittent hour-glass contraction due to a tonic contraction, and therefore a vagus stigma, from what source is not known, is often encountered in just such cases under consideration, where no stomach lesion of any kind exists. That the contraction is spastic, even if lasting for some time, and not organic, can quickly be determined. The true spastic nature of the hour-glass contraction may be revealed by letting the patient draw in his lower abdomen, by effleurage, or by atropine injections, which influence the vagus. The hour-glass contraction, however, need not be a sign of a florid condition, as the pylorospasm seems to be. It is seen as well opposite the site of a florid gastric ulcer as of an ulcer scar, or it may be seen even at the point where an ulcer has been excised."

IX. Hour-Glass Contraction

Being a definite deformity of the stomach, it seems unnecessary to mention that a person in possession of the technical ability to elicit some of these other signs should demonstrate this one with comparative ease. Before we attempted other work on gastric ulcer and before we knew of spasmodic hour-glass contractions, the radiographical demonstration of organic hour-glass was well established. The former mistakes in diagnosis due to deep peristalsis, spasmodic contractions, and faulty position of the patient were excusable, and yet to-day it is astonishing to see the prevalence of mistakes of this character. It is conceivable that in certain cases of malignant hour-glass contraction no differentiation from a contraction following ulcer could safely be made by X-rays alone.

ELLIOTT: "The more permanent the hour-glass contraction as to location, the more certain it is to be evidence of a pathologic lesion in the segment of the contraction."

CARMAN: "Organic hour-glass contraction of the stomach usually but not invariably accompanies diverticulum. Commonly, the canal joining the two segments is short and near the side of the lesser curvature. Organic hour-glass is differentiated from spasmodic or functional hour-glass by the persistence of the former after energetic palpation, or after the administration of belladonna for two or three days. Both these procedures, however, may fail occasionally to relax a spasmodic hour-glass. Organic hour-glass may also occur in penetrating ulcer without diverticulum."

LEONARD: "The benign hour-glass stomach is the sequel of callous ulceration of the lesser curvature of the stomach. The contracting scar tissue draws the greater curvature of the stomach, that lies opposite to the ulceration, over toward the thickened lesser curvature. It is because the ulcer is generally on the lesser curvature and the contracting tissue is drawn toward it that the connecting canal is typically found near the lesser curvature. In contrast to this, the canal is situated centrally in malignant hour-glass contraction."

COLE: "The constriction of the hour-glass stomach is usually narrow, having the appearance of a ring with clear-cut edges. It resembles a peristaltic contraction, except that it does not progress pylorusward nor relax during diastole. The upper segment is large in proportion to the lower one, which corresponds in size and shape to a normal empty stomach. The amount of chyme that collects in the lower segment depends upon the relative size of the constricting ring compared with the pyloric sphincter, and the activity of its peristaltic contractions. A deep peristaltic or spasmodic contraction may so closely resemble an hour-glass stomach that one is not justified in making a diagnosis of such a condition unless two complete series of fourteen to twenty-four radiograms are made, preferably on subsequent days. In several cases much discredit has been cast on radiography because a diagnosis has been based on only three or four radiograms, and a deep peristaltic contraction has been mistaken for an hour-glass stomach. In a series of radiograms the real peristaltic contractions relax with each diastole, and as they progress pylorusward they move up to the constricting ring, which remains stationary."

EVIDENCES OF DUODENAL ULCER

As in the consideration of gastric ulcer, it has been thought most feasible to make use of the various writers' original statements, transferring them in as complete a form as possible, and arranging them in topical groups, so that a résumé of the best consensus of opinion possible may be obtained by a single reading.

If certain points pertaining to gastric ulcer have seemed to remain unsettled, the whole subject of duodenal ulcer from the röntgenological standpoint will seem more difficult, unless we conceive that there may be two general systems of approaching the subject, both of which are adequate. For we find, running through all the appended material, two general points of view of the entire subject, each of which modifies all the statements of its advocates. Practically, two schools of workers have evolved, one studying bismuth-filled viscera with the idea of noting all signs known to exist in duodenal ulcer; the other specializing on the intimate configuration of the duodenal and adjacent shadows with the idea of showing, radiographically, the direct effect of the ulcer mass or its sequelæ on duodenal outlines. The former school follows such a symptom-complex as is given below; the latter pays more attention to the classification of types of duodenal shapes seen under varying conditions, and has

adopted several unique phrases to describe the gross and minute malformations which bear so strongly on their inferences. As will be explained, the latter school insists upon a multiplicity of radiographs made in series, if not cinematographically.

The reader is therefore referred to the following material, which is self-explanatory and gives the authors' meaning much more accurately than any possible restatement.

PFÄHLER:

- (a) "Normal stomach shadow.
- (b) "Increased peristalsis.
- (c) "Normal pyloric outline.
- (d) "A painful pressure-point over the duodenum.
- (e) "Resistance at the pain-point evidences callous ulcer.
- (f) "A remnant of bismuth outside the duodenal outline, associated with resistance, and not easily movable, points to a penetrating duodenal ulcer.
- (g) "Constrictions and secondary dilatations not produced by adhesions from extraduodenal affairs.
- (h) "Occult blood in the stool in association with the above evidence would point to an acute ulcer."

LOCKWOOD:

- (a) "Upward displacement of the pyloric end of the stomach, fixing it in an oblique or horizontal position.
- (b) "Intermittent pyloric contractions.
- (c) "Indentations of the cap, not caused by the descent of the second portion of the duodenum.
- (d) "A shadow of bismuth remaining on the cap, after the stomach and remainder of the duodenum are completely evacuated.
- (e) "Very rarely, sharp contractions of the duodenum.
- (f) "Radiographic evidence of hypersecretion."

GEORGE:

1. "Signs usually emphasized —
 - (a) "Abnormally marked peristalsis.
 - (b) "Gastric hypermotility.
2. "Signs of varying value and occurrence —
 - (a) "Persisting fleck of bismuth in upper duodenum.
 - (b) "Haudek's niche, of penetrating ulcer.
 - (c) "A tender-point corresponding to the position of the duodenum.
 - (d) "Stenosis of the duodenum with retention of bismuth.
 - (e) "Fixation of the pylorus and first portion of the duodenum.

"All the above-mentioned signs, if present, merely support the clinical diagnosis, but very rarely make it positive. We believe that the chief trouble, in all this method up to now, has been that too much reliance is placed upon purely fluoroscopic findings."

CASE:

- (a) "Abnormalities in the emptying time.
- (b) "Changes in gastric tonus.
- (c) "Spastic indrawing of the greater curvature of the stomach.
- (d) "A subjective pain-point, corresponding with the shadow of the duodenum. Pressure pain-point.
- (e) "Gastric peristalsis, normal except for changes in rate and intensity. Antiperistalsis.
- (f) "Filling defects in duodenal bulb.
- (g) "Persistent fleck of bismuth in the crater of an old ulcer.
- (h) "Duodenal stasis."

EVIDENCES OF DUODENAL ULCER CONSIDERED TOPICALLY

I. Emptying Rate of the Stomach

CASE: "If the meal has not been a large one, the stomach may be entirely emptied within an hour; when the meal is larger, delayed pylorospasm may be set up and a small residue remaining longer than six hours may result. In the majority of cases quick emptying will be observed. Duodenal ulcer cases which do not exhibit this quick emptying are those where actual mechanical obstruction exists, as by cicatricial constriction. Rapid emptying is also observed in cholelithiasis; in perforated gastric ulcer with adhesions to the pancreas; in extensive gall-bladder region adhesions; and in early carcinoma of the pylorus, where an infiltrating process renders the sphincter patent but has not yet produced actual stenosis. Hypermotility at first, with later delay, is suggestive of duodenal ulcer."

LEONARD: "In superficial ulcer of the duodenum the emptying time of the stomach is normal or decreased, in contrast to the delayed emptying in cases of gastric or pyloric ulcer, which produces a spasm of the pylorus."

PFÄHLER (Cites Haudek's statement): "Not infrequently a bismuth-in-water mixture passes through the pylorus immediately after taking, either spontaneously or by effleurage, which is in contrast to pyloric ulcer."

GEORGE: "The question of whether or not there is stasis of the stomach after six hours, when the duodenal ulcer is active or cicatrized, is no simple one. There is always a balance between nervous and mechanical forces, which varies from case to case, and is of such a nature that it is useless to attempt to predict from one case to another. Therefore, while the presence of gastric hypermotility may help us diagnostically in a case of suspected duodenal ulcer, yet its absence, or even the presence of gastric stasis, does not rule it out by any means."

II. Changes in Gastric Peristalsis

CASE: "In cases of duodenal ulceration, the peristaltic waves may be perfectly normal. In cases of pyloric ulcer, other than simple ulcer, the peristaltic waves are usually exaggerated in depth and often in number. In both pyloric and duodenal ulcer, the peristaltic waves proceed clear to the pylorus without hindrance."

LEONARD: "The peristalsis of the sinus is more marked in duodenal than in gastric ulcer, and the pylorus opens more frequently."

GEORGE: "Abnormally marked peristalsis is an important sign if it is found. Exaggerated peristalsis may be absent in many cases definitely proved at operation to be duodenal ulcer."

III. Changes in Gastric Tonus

CASE: "The stomach is hypertonic or orthotonic in duodenal ulcer, but usually hypotonic or atonic in pyloric ulcer. Marked delay in the clearance of the stomach, associated with gastric dilatation, is likely to be due to a benign cicatricial obstruction; . . . in the majority of cases, pyloric obstruction with marked stasis without gastric dilatation is significant of a carcinomatous pyloric obstruction."

LEONARD: "The stomach generally has the hypertonic form, the pylorus and greater curvature lying above the umbilicus. The stomach is not dilated in its lower pole as in gastric or pyloric ulcer."

IV. Pain-Points

CASE: "A subjective pain-point corresponding with the shadow of the duodenum is very significant. Pain or

pressure over the duodenal shadow is significant of duodenal adhesions, and, though often due to complicated duodenal ulcers, may also be due to other causes, as, for instance, cholecystitis. A case of uncomplicated duodenal ulcer probably will not exhibit any point of pain on pressure."

LEONARD: "A point of tenderness upon pressure is located over the bulbous duodeni, and the patient, if asked to locate the point of pain, usually places the finger over this spot."

PFÄHLER: "A painful pressure-point may be found over the duodenum, and it should move upward with the indrawing of the abdomen (Haudek). Resistance at the same location as the painful point is evidence of a callous ulcer."

EISEN: "In duodenal ulcer a point of tenderness may correspond with the site of the bulbous duodeni shadow, but this sign is only of value when it can be ascertained that the projected area belongs to, i.e., moves with, the bowel."

V. Spastic Manifestations

Here we find the observation by Case of a spasmodic contraction in the stomach not infrequently associated with duodenal ulcer, as was mentioned under the discussion of such contractions in gastric ulcer. The frequency with which Case has seen this warrants him in setting it down as a new sign often associated with ulcer of the duodenum. In this connection he and Leonard make the following deductions:

CASE: "A spastic indrawing of the greater curvature is often seen at the level of an ulcer of the stomach. It was formerly considered that this spastic indrawing was pathognomonic of gastric ulcer at the level of the spasm. In sixteen operated cases of duodenal ulcer this spastic indrawing, high up on the greater curvature, was noted. In other cases of duodenal ulcer this sign was absent or variable. In differentiating between a spasm due to gastric ulcer and spasm due to duodenal ulcer, it is observed that in duodenal ulcer there is no pain-pressure point over the lesser curvature corresponding to the level of the spastic indrawing; on the contrary, there is pain on pressure over the duodenum, and manipulation of the duodenal region increases the depth of the spastic indrawing."

LEONARD: "Spasms of the duodenum due to neuroses produce transient symptoms that are characteristic of ulcer or mild stenosis, but can be differentiated by their amenability to appropriate medical treatment."

VI. Persistent Fleck of Bismuth in the Ulcer Crater

CASE: "Rare. More commonly the duodenal bulb retains a residue of bismuth for some time after the stomach has been emptied; but this residue is larger than the crater of an ulcer, and does not, except in rare cases, cling to the ulcer crater."

PFÄHLER: "A remnant of bismuth outside the duodenal outline, associated with resistance and not easily movable, points toward a penetrating duodenal ulcer."

LEONARD: "Penetrating ulcer of the duodenum is infrequent, and has in addition to the symptoms of superficial ulcer the characteristic diverticulum outside the normal shadow of the duodenum, which persists as a small bismuth fleck after the duodenum is empty."

GEORGE: "This sign is sometimes of great value, but it is inferior to the more exact method of studying the duodenum that we describe later (serial radiography)."

COLE: "Radiographs made from four to six hours after the ingestion of bismuth and buttermilk frequently show a deposit of bismuth in the cap after the stomach, the remaining portion of the duodenum, and the jejunum are completely evacuated. This retention is most often observed in cases where the appearance of the cap in the plates, taken immediately after the bismuth meal, is not normal. I believe that it is this retention in the cap which has frequently been considered an accumulation of bismuth on the surfaces of an ulcer. In some such instances, an ulcer of the stomach or duodenum may exist, and the absence of peristalsis in the cap due to adhesions will cause the accumulation."

VII. Abnormalities in the Filling of the Duodenum

CASE: "Where the duodenal bulb persistently fails to fill, the indication is duodenal ulcer or periduodenitis, with resulting adhesions. The same has been seen in pancreatic carcinoma. Sometimes duodenal ulceration causes a persistent filling defect in the shadow of the duodenal bulb. Unusual filling of the entire duodenum is a frequent observation in cases of duodenal irritation, not only in duodenal ulcer, but in gall-stones or periduodenal adhesions from any cause. This unusual visibility of the duodenum is an indication rather of a patent pylorus than of lag in the motility of the duodenum. When the cicatrix attending duodenal ulceration obstructs, the filling of the duodenum is very characteristic, marked distention of the duodenum being present on the upper side of the constriction."

LEONARD: "A condition characteristic of all ulcers of the duodenum is the retention of the opaque chyme in it for a longer period than normal, as the result of a mild stenosis, possibly spasmodic, at the duodenojejunal juncture. Stenosis is characterized by an abnormal repletion and the presence of visible peristalsis and antiperistalsis. The character of the stenosis, whether it is spasmodic—cicatricial, due to pressure of bands from without, or the result of new-growths, cannot in the majority of cases be determined by the röntgen method."

PAHLER: "Constrictions and secondary dilatations may result from the contraction of a callous duodenal ulcer, but similar effects may be produced by other forms of adhesions, and therefore the evidence must only be considered confirmatory."

GEORGE: "Stenosis of the duodenum may manifest itself by retention of bismuth. This is induced by cicatricial changes or spasm, usually at some point in the transverse portion. The great majority of duodenal ulcers occur in the first portion of the duodenum; therefore, this particular sign is of no value in most of the cases."

EISEN: "If the obstruction, therefore, is nearer the pylorus and within the first superior part of the duodenum, the principal factors upon which to rely are the aforesaid phenomena of an overactive stomach, an open or insufficient pylorus, and a constantly filled bulbus duodeni. When the stenosis has become complete there is sometimes seen, from the pylorus on, a continuous finger-like projection to the point of a stenosis, which, as said, a radiograph will aptly reveal. That there is really a spasm at the site of, or directly above, a florid ulcer, has not been definitely proven."

VIII. Constant Changes in the Configuration of the Duodenum

ELLIOTT: "The bulbus duodeni has a constant and definite appearance upon the plate during the systole of the pyloric end of the stomach, any variation of which, within normal limits, should receive due consideration in the interpretation of the plate."

GEORGE: "What we are able to recognize in the duodenum is not the duodenal ulcer *per se*, that is, the actual mucous membrane erosion, but we demonstrate on the bismuth mass of cicatricial contraction stenosis, perforation, adhesions, and penetrating effect of a chronic ulcer."

COLE: "The induration surrounding an ulcer projects into the lumen of the cap, causing a displacement of bismuth, as constant as one's finger-prints in a ball of putty. It may be so small that its projection presents only a constant dent in one side of the cap, or it may be so extensive as to distort the lumen of the cap beyond recognition. The induration may involve one-half of the cap without distorting the other half. In such a case, the entrance of the lumen of the pyloric sphincter is an important guide in determining the center of the cap. The puckering from the cicatricial contraction may cause a deformity equally as great as the induration. Indeed, it is doubtful if one can determine radiographically whether the deformity is due to induration or adhesions, or which predominates. If one radiograph out of fifty shows a perfectly symmetrical cap and a normal pyloric sphincter, as previously described, one is justified in making a negative diagnosis of post-pyloric ulcer. If the cap is contracted and worm-eaten, but not drawn to the right, and the duodenal surface of the sphincter is irregular, duodenal ulcer should be considered."

CASE: "Defects in the duodenal bulb constitute one of the chief röntgenographic means of recognition of duodenal ulcer and its complications. Filling defects in the duodenal shadow, to be interpreted as ulcer should be differentiated from the normal defects due to hepaticoduodenal ligament and the deformities of the bulb due to extra-duodenal pressure, as, for instance, gall-bladder, blood-vessels, second portion of the duodenum, etc. The defects due to gall-bladder region adhesions are very characteristic; the defect occurs on the gall-bladder side of the bulb shadow, but the bulb is otherwise anatomically normal."

EASTMOND: "When the ulcer is old the adhesions or cicatrization will produce a marked irregularity in the outline. This irregularity is constant and persistent, and is seen by preference on the left side in distinction to the right-sided adhesions in gall-bladder disease, but they may be general."

COLE: "The manner in which the cap lies between the gall-bladder on the right and the common duct on the left, and the fact that slight adhesions prevent its normal dilatation, must always be borne in mind. When the adhesions involve the cap only, it is asymmetrical, contracted, ragged, or absent. Frequently a small indentation is observed either on the right or left side of the cap. This may be caused either by pressure from the second portion of the duodenum, where it descends from the top of the cap, or by the common bile duct, which is in close proximity on the left. This indentation might readily be mistaken for an ulcer of the duodenum."

RÉSUMÉ DEVELOPS INTERESTING FACTS

A survey of these excerpts brings to light the following facts:

1. In the hands of a competent and experienced observer the röntgen method may be of considerable service in the diagnosis of gastric and duodenal ulcer.

2. The majority of observers obtain their data by the combined use of the fluoroscopic screen and the radiograph.

3. There is as yet a sufficiently wide divergence of opinion concerning the diagnostic value of certain signs as to make the reader cautious in accepting the present views as final.

4. There is more perfect agreement on the radiological signs due to the mechanical deformities from callous ulcers and their sequelæ than on signs due to the irritation of florid ulcers or the irritable scars of ulcer.

5. The lesions accounting for a spasmodic indrawing of the greater curvature are becoming more numerous. Is there an underlying etiological factor which will explain all cases?

6. In the study of the duodenum there have developed two schools of workers; one, the followers of the European writers, which takes cognizance of all demonstrable changes in motility, mobility, and configuration, due to duodenal ulcers and their sequelæ; second, headed by Cole, who believe that all post-pyloric ulcers produce such an effect upon the duodenal walls as to make persistent changes in the configuration of the duodenal shadow. This is to be recognized by a study of a considerable series of radiographs.

7. While it is generally admitted that the radiology of the duodenum is incomplete, it would appear from the above citations that the percentage of accurate inferences regarding duodenal ulcer was greater when the method of serial radiography was used.

The literature would indicate that there will be no cessation of interest in this field during the present year. We, therefore, anticipate a great deal of progress and perhaps a final settling up of some of the disputed signs.

The next contribution of which we have knowledge will be from Carman, in which he will present the radiology of duodenal ulcer with data from a large number of cases operated at the Mayo Clinic.

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ABSTRACTS OF CURRENT LITERATURE

GENERAL SURGERY

SURGICAL TECHNIQUE

ASEPTIC AND ANTISEPTIC SURGERY

Frank, L.: The Use of Iodine in Abdominal Surgery. *Am. J. Obst.*, N. Y., 1913, lxi, No. 5.
By Surg., Gynec. & Obst.

Frank concludes, from experimental work which he has carried out on dogs, that iodine should never be used inside the abdomen, because it is toxic and produces adhesions; and that when it is used for preparation of the abdomen, the intestines should be protected from contact with the skin so treated, to prevent adhesions forming.

N. SPROAT HEANEY.

Saussailoff, M., and Telitschenko, E.: Alcohol Dressings (Über Spiritusverbände). *Vrckh Gaz.*, 1913, xx, 1206.
By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The authors carried out a series of laboratory experiments to determine the disinfecting properties of alcohol. They found that various kinds of bacteria, such as tuberculosis, anthrax, etc., which were kept for as long as 24 hours under alcohol and then put in bouillon, showed abundant growth; those kept in 70 per cent alcohol showed the least growth. In another series of experiments they found that the addition of a little 10 per cent alcohol to the bouillon prevented all bacterial growth; the same result can be obtained by the addition of 5 per cent alcohol and 0.01 per cent iodine to the bouillon.

The skin of several physicians and hospital attendants was washed with alcohol, and small bits of the skin placed in a nutrient medium; only in the case of one laboratory assistant was there any growth of the bacteria; in 20 per cent of the experiments with him there was growth.

From these experiments the authors conclude that alcohol is not a disinfectant in the sense of absolutely killing the bacteria, but that it limits their increase and growth. After the conclusion of these experiments the authors tried alcohol dressings. They were used at first only on small wounds, later on large ones. A few patients complained immediately after the application of the dressing of a burning pain in the wound, but this soon disappeared. In the course of two years over 10,000 alcohol dressings were used with excellent results. Large and small infected wounds healed by first intention without suppuration; some necrotic

pieces of skin resulting from trauma were mummified without undergoing suppuration or putrefaction; and infected wounds which were sutured recovered by first intention under the alcohol dressings. Suppurating wounds became clean very quickly, especially when the alcohol was brought into contact with the whole suppurating surface. In this event, however, the formation of granulations was somewhat delayed. The technique is given as follows: The wound itself and the surrounding skin are carefully cleansed with gauze dipped in alcohol, and then four to twelve layers of gauze dampened with alcohol are laid over the wound and covered with paraffin paper; after this, linen bandages are applied as usual. The dressing is left on from one to two days.

The authors emphatically recommend alcohol dressings in infected wounds and in cases where circumstances prevent the carrying out of absolute asepsis.

VON HOLST.

ANÆSTHETICS

Janeway, H. H.: Intratracheal Anæsthesia from the Standpoint of the Nose, Throat, and Oral Surgeon; with a Description of a New Instrument for Catheterizing the Trachea. *Laryngoscope*, 1913, xxiii, 1082. By Surg., Gynec. & Obst.

The author refers to the value of intratracheal insufflation in nose, throat, and oral operations, pointing out the utter inadequacy of the old methods by inhalation from any kind of cone, and points out that the advantage of insufflation is not merely convenience to the operators, but that it is an even and safer anæsthesia. He shows that pharyngeal insufflation (nasal or oral) has the same advantage and is usually much preferable to rectal anæsthesia, judging from the limited use of the latter. It has simplicity to recommend it, while in intratracheal insufflation, in spite of its greater complications and the skill required in its administration, it has in its favor the steady outflow from the trachea of the air current, helping to prevent inhalation of blood and mucus. Intravenous anæsthesia, the newest attempt to accomplish the ideal method for these operations, has much to commend it.

The aim of the article is to introduce, for overcoming the chief difficulty in intratracheal insufflation, a new speculum for catheterizing the trachea.

This is a tubular speculum, electric-lighted from dry cells in the handle, developed, apparently, from the Jackson bronchoscope, and having just enough curve of the distal (laryngeal) end to allow inspection of the larynx while the catheter is slid through it into place. This inspection is provided for by an indirect method with one instrument, a small mirror reflecting the image and allowing a considerable curve in the speculum; but with another instrument by a direct vision of the larynx, this being an advantage, though the curve of the instrument is less, for direct inspection of the larynx is very important before catheterizing.

To emphasize this he describes some features of his intratracheal apparatus, which is equally adapted for ether or nitrous oxide and oxygen. The anæsthetic vapor introduced directly from the apparatus to the trachea is vaporized, warmed, and moistened. Automatic interruption of the current providing for periodic deflation of the lungs, the relative amount of ether used is controlled both by the air passing above the ether and, if desired, through it. A modified form of apparatus is suggested to provide one small and portable for universal use. One of the useful fields for intratracheal insufflation is gastroscopy, as well as bronchoscopy, for a smooth anæsthesia is here indispensable for the best work.

FRANK W. PINNEO.

Hazelhurst, F.: The Kuhn Method of Peroral Narcosis. *Laryngoscope*, 1913, xxiii, 1091.

By Surg., Gynec. & Obst.

The author adds his experience with nine cases to the others recorded, in using Kuhn's metal tube for operations about the mouth and nose. This method of intubating the larynx for anæsthesia, first published by Kuhn in 1900, is with a flexible metal tube of unique type, having a firm handle held in one hand, while with the other an "intubator," resembling O'Dwyer's, inserted through the

tube, introduces the latter into the trachea and is then withdrawn. The results showed no injury to mucous membranes, no hoarseness, occasional but transient soreness of throat, and a satisfactory anæsthesia. In one case, of a child, the tube, being too large, caused obstruction to respiration and was abandoned.

FRANK W. PINNEO.

Braun, H.: Use of Potassium Sulphate to Strengthen the Local Anæsthetic Effect of Novocaine (Über die Potenzierung der örtlichen Novocainwirkung durch Kaliumsulfat). *Zentralbl. f. Chir.*, 1913, xl, 1513.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author performed a series of experiments on himself and confirmed Kochmann's and Hoffmann's assertions that the anæsthetic effect of novocaine is markedly increased by the addition of potassium sulphate. He does not, however, agree with Hoffmann's opinion that with the addition of potassium sulphate a 0.1 per cent solution of novocaine becomes as effective as a 0.5 per cent solution without it, for the anæsthetic effect of the former is much less and is not so reliable. He recommends, therefore, that potassium sulphate should be added to the solution, but that the concentration of novocaine should be the same as usual. Only in cases where very large amounts of the anæsthetic is used the concentration may be reduced to 0.25 per cent. Novocaine poisoning need not be feared even with the stronger concentration, provided one bears in mind the readiness with which suprarenin is decomposed and uses only fresh solutions. Beginning decomposition of the suprarenin is manifested by the red color of the solution. Four per cent of potassium sulphate should be added. If Höchster's novocaine-suprarenin tablets are used they should be dissolved, not in physiological salt solution, but in a solution of 7 parts salt, 4 parts potassium sulphate, and 1000 parts water.

TIEGEL.

SURGERY OF THE HEAD AND NECK

HEAD

Worthington, T. C.: Empyema of the Frontal Sinus with Exposed Dura, Cured by Obliteration of the Sinus. *Laryngoscope*, 1913, xxiii, 1073.

By Surg., Gynec. & Obst.

A case is described in which the patient, aged 35, had had trouble with his nose, as long as he could remember, viz., difficult nasal respiration, especially on the right side, with a great amount of mucus from the nose and nasopharynx. For over two months previous to the operation he had suffered from attacks of vertigo. A radical operation was performed, the sinus showing evidence of chronic disease. Near the upper margin of the posterior wall the dura was exposed over an area one-fourth by one-half inch in extent. The wound had healed by granulation and the sinus had become obliterated 125 days after the radical operation had been per-

formed. The author calls especial attention to the fact that nasal irrigation was not used at the time of operation, owing, in his opinion, to the danger of the irrigating fluid entering the orbit.

In conclusion, it is stated that this case shows the necessity of radical treatment of nasal accessory sinus disease, as repeated small external openings performed previous to the radical operation had given no relief. He reports the patient as well a year after the treatment.

W. H. JAMESON.

Skillern, R. H.: Untoward Results Following the External Operation on the Frontal Sinus; a Critical Review of Twenty Cases. *Laryngoscope*, 1913, xxiii, 1063.

By Surg., Gynec. & Obst.

The results are taken from all the cases which had come under the care of the author, the Killian operation having been performed in each case.

The untoward conditions which may follow the operative procedure are enumerated, viz:

1. Edema of eyelids, particularly the superior.
2. Paralysis of the upper lid.
3. Continuation of the discharge.
4. Fistula or abscess formation.
5. Hemicranial anæsthesia.
6. Neuralgia — (a) local, (b) hemicranial.
7. Deformity — (a) sinking in of forehead, (b) contraction of scar, (c) falling in of eyebrows, (d) excessive growth of eyebrows, (e) keloid.
8. Formation of pneumatocele.
9. Temporary and permanent diplopia.
10. Blindness on operated side.

1. Edema of the eyelids occurred in every case, and in one case, with tuberculous history, it was permanent and of a recurring nature.

2. Paralysis of the upper lid was present in every instance immediately after the operation, and in two cases it showed a disposition to become permanent.

3. The length of time the discharge will continue, he considers, depends largely on the extent of the surgical intervention. This discharge gradually diminishes in amount and consistency, and in 50 per cent of his cases continued indefinitely, despite frequent application of the various silver preparations.

4. Fistula and abscess formation are classed as primary and secondary, the primary occurring before healing, the secondary being those resulting from reinfection and appearing long after the external incision has healed. He reports two cases of primary and three of secondary, resulting in abscess formation along the line of incision. Necrosis and breaking down of the ridge of bone did not occur in any of the cases.

5. Hemicranial anæsthesia occurred in every case, due to the severance of the supra-orbital nerve. This was accompanied by varying degrees of discomfort, the complaints being limited entirely to the females. Sensation returned in every case, the time required for the process varying markedly, six months being sufficient in the majority of cases. According to the author, there appears to be some connection between the duration of the anæsthesia and subsequent neuralgia, and he thinks that in all the cases in which the hemicranial anæsthesia was unduly prolonged, neuralgic manifestations subsequently appeared.

6. He considers neuralgia as one of the most annoying sequelæ. It occurred in seven of the series, but in only two cases were the symptoms severe enough to require surgical interference. In one, despite resection of the nerve, the neuralgia recurred.

7. In the classification of the series there were thirteen practically undeformed; in four, there were slight depressions over the operated eyes and some contraction of scar tissue along the descending incisions, due to reinfection. In two cases the result was not quite so good, one due to a marked depres-

sion above the eye, the other to a persisting edema. Another case showed considerable deformity, due to the depression and scar-tissue contraction as a result of tearing of the skin during the operation.

8. The formation of pneumatocele in two cases was noticed on blowing the nose, at the time of the first dressing. Firm bandaging caused this to disappear.

9. Diplopia was present in fourteen of the cases on removing the first bandage; this disappeared in the majority of cases in a few days. In eleven, the diplopia had completely disappeared at the end of one month; in one case it lasted for nearly four months; and in two it appeared permanently.

10. Blindness on the side operated on occurred in one of the latter cases, in which the disease involved the frontal, entire ethmoidal and sphenoidal sinuses. There was nothing unusual noted regarding the operation, and it was only on removing the first dressing that the eye was discovered to be sightless. The blindness was permanent. The author advances as possible explanations: (1) Fracture into the optic foramen; (2) the optic nerve may have become surrounded by an extravasation of blood, which became organized; (3) a dehiscence may have existed in the sphenoidal sinus, and the optic nerve sheath was injured while opening the sinus; he considers the latter the most plausible explanation. He refers to two similar cases reported by Knapp and Freudenthal and reviews the cases in detail.

W. H. JAMIESON.

Pussep, L. M.: Radical and Palliative Methods of Operation for Brain Tumors, Based on 24 Cases by the Author (Die radikalen und palliativen Operationsmethoden der Hirntumoren auf Grund eines eigenen Materials von 24 Fällen). *Verhandl. d. XII Kong. russ. Chir., 1913.*

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author reports 24 cases of his own operated on during the last two and one-half years. Very recent cases, two months or less after the operation, are not reported. Radical operation was performed 15 times; 5 times trephining was done for decompression, and in 2 of these cases there was permanent drainage of the ventricle. In the cases of radical operation the tumors were localized as follows: 2 in the motor cortical region; 1 in the centrum semiovale, 1 in the temporal lobe; and 1 (a cyst) in the pineal gland. Once there was a diffuse tumor formation noted in the dura and cerebral cortex.

There were five cases of operation for tumors of the cerebellopontine angle. There were two tumors of the vermis of the cerebellum and one of the pons and the left hemisphere of the cerebellum. As to the character of the tumors, there were one endothelioma, 1 glioma, 8 sarcomata, 1 carcinoma, 3 cysts, and 1 fibroma. The radical removal of the tumor was accomplished in 11 cases; of these 6, or 55 per cent, recovered. One of these, however, died five weeks after the operation. Of 4 tumors of the cerebrum, 1 died of pneumonia, three weeks after

the operation; of 6 tumors of the posterior fossa, 4 died. In cases where there is great pressure on the brain and radical removal cannot be considered, Pussep recommends permanent drainage of the ventricle, according to the method described by him.

He comes to the following conclusions:

Even deep-seated tumors may be removed radically if they can be accurately localized. In tumors of the cerebellopontine angle, the removal of the bone is to be preferred to the osteoplastic method, as the mortality is less. Tumors of the pineal gland are accessible to operation.

Pussep believes that palliative operations should be decreased in favor of radical ones, and that operations in the posterior fossa of the skull should be performed in two stages, even if the general condition is good, but that operation in one stage is preferable for the cerebrum.

HESSE.

Frazier, C. H., and Lloyd, J. H.: A Case of Tumor of the Hypophysis, Partially Removed by the Transfrontal Method of Approach. *J. Am. M. Ass.*, 1913, lxi, 1626. By Surg., Gynec. & Obst.

The hypophyseal case here presented is noteworthy because of the absence of a distinct cachexia of either acromegaly or of dystrophia adiposogenitalis, but with pressure symptoms, manifested by blindness with headache and vomiting, and presenting, under the X-ray, evidence of a pituitary tumor. Pain in the limbs was an unusual feature and the authors conceive it to be due to pressure on the pain tracts by the pituitary lesion.

When preparing for the transfrontal approach to the hypophysis, the size of the frontal sinuses is studied by transillumination and the röntgenogram, though the latter has been found unreliable. The smaller was selected and an incision was made following the supra-orbital ridge from the external angular process to the median line. The second limb extended upward in the median line, one inch within the hair-line, and the third ran within the hair-line to a point on a level with the external angular process. An osteoplastic flap was then reflected and the frontal lobe exposed, the latter being retracted upward and a wedge-shaped section of the supra-orbital ridge was removed. The balance of the orbital roof was removed, with rongeur forceps, down to the optic foramen and the dura incised a distance of 0.5 cm. above the base of the skull from one anterior clinoid process to the other. A soft reddish mass was found filling the sella turcica and this was in part removed. The bone flap was then replaced and the external wound closed.

Histologically, the tumor proved to be sarcoma with telangiectatic characteristics. During convalescence there was marked oedema of the face, and pain was present in the extremities and thorax for two weeks. The blood-pressure, which was low, was not affected in the slightest by either pituitary extract or epinephrin in continued and ascending

doses. The advanced state of optic atrophy precluded any improvement in vision.

The authors wish to emphasize the advantages offered by the transfrontal route in the facility of exposure, the opportunity of determining with some accuracy the extent of the tumor, the avoidance of contamination by the nasal secretion, and the splendid cosmetic results. E. K. ARMSTRONG.

NECK

Barthélemy and Fairise: Branchial Epithelioma Involving the Submaxillary Glands (Epithélioma branchial du cou inclus dans la glande sous-maxillaire). *Rev. méd. de l'Est*, 1913, xlv, 501.

By Journal de Chirurgie.

Barthélemy and Fairise report a branchial epithelioma involving the whole submaxillary gland in a man of 48. The tumor, which was as large as a pigeon's egg, had been noticed two months before and diagnosed as adenitis. It was incised and found to be filled with a liquid resembling pus, but there was no solid tissue and no cystic wall. The cavity was curetted, but very soon ulceration began. It extended rapidly and, seven months after the first appearance of the tumor, the patient died of pharyngeal hæmorrhage.

Examination of the material obtained by curettage showed an epithelioma of the intraglandular pavement type. As there is no epithelium in the submaxillary which could give rise to a pavement epithelioma it must be assumed that it was of branchial origin.

Intraglandular branchial epitheliomas are very rare. The authors could find only one other authentic case, that reported by Fredet and Chevassu in the parotid. In a great many other cases reported there was only secondary invasion of the gland. The real branchial epitheliomas develop from the epithelial debris of the primitive branchial cleft.

This case shows the extreme malignancy of these tumors, which ulcerate and extend very rapidly and are accompanied by a very intense inflammation. It also shows the necessity for early extirpation of small tumors of the neck, which are generally diagnosed as adenitis and are sent to the surgeon only when malignancy is so far advanced as to make extirpation hopeless. Though they are often only glandular, still they are sometimes branchiomatous. They may be benign even then if they are mixed branchiomatous, that is, if they are derived from the branchial arches which give rise to complex connective-tissue tumors; but they may be excessively malignant if they are branchial epitheliomas, that is, if they are derived from the branchial clefts.

J. DUMONT.

Farrant, R.: Hyperthyroidism: Its Experimental Production in Animals. *Brit. M. J.*, 1913, ii 1363. By Surg., Gynec. & Obst

Thyroid feeding was carried out in cats, rabbits, guinea pigs, and dormice. Fur changes were pro-

duced, loss of weight, bodily weakness, diarrhoea, tachycardia, occasional glycosuria, disappearance of fat, muscular wasting, degeneration of the heart, liver, and kidneys, enlargement of the islets of Langerhans, and hæmorrhagic changes in the intestine. No exophthalmos was produced and no changes were produced in the ductless glands or lymphoid system.

M. S. HENDERSON.

Von Wagner, J.: Surgical Treatment of Hypothyroidism (Über chirurgische Behandlung des Hypothyroidismus). *Wien. klin. Wchnschr.*, 1913, xxvi, 1532. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

In experimental transplantation of thyroid glands, Schiff, the experimental founder of the theory of hypothyroidism, showed on dogs that the thyroid gland transplanted from other dogs can for a while take the place of the one removed, though after a time the transplanted gland is absorbed. Von Eiselsberg obtained results in cats only when he operated unilaterally; that is, he first removed the thyroid on one side of the neck and transplanted it somewhere else, and then, after some weeks, extirpated the other half. Tetany occurred only when the transplanted gland was afterward removed. Later experiments showed that the transplant took only when it was from the same animal — autotransplantation. It has not been proved with certainty that, even in autotransplantation; the transplanted gland remains capable of functioning. Accessory glands and the necessity of a long time for observation complicate the question. Cristiani gave an indirect proof of it by showing that a part of a gland transplanted successfully into the transparent ear of a rat hypertrophied when the other half was removed.

Kocher's attempts in cachexia strumipriva to transplant human or animal thyroids intraperitoneally or extraperitoneally (heterotransplantation) resulted in only transitory improvement of the symptoms. Bircher, too, twice transplanted a human thyroid on a 20-year-old girl, with only temporary results. The pieces of thyroid never functionated, but only caused temporary improvement by the substance being absorbed. This fact suggested to Murray the idea of treating myxœdema, not by transplantation, but by subcutaneous injection of a glycerine extract of the gland, which could be absorbed. This was the starting point of internal thyroid therapy. Autotransplantations in human beings take, and after a long time show normal histological structure of the gland (Cristiani). Therapeutically, however, the results are not good. Von Payr reports the most successful case, in which he transplanted the thyroid gland of a mother into the spleen of a child with infantile myxœdema. There was rapid improvement at first, but it did not continue.

The résumé of results shows that heterotransplantation generally fails, and that autotransplantation would have an object only in total extirpation

of a goiter. Since such a procedure is only resorted to in case of malignant new-growths, autotransplantation cannot be considered in these cases.

In the consideration of operative measures on the thyroid gland, the authors point out that in the partial resection of an exophthalmic goiter more glandular tissue often remains than is possessed by a normal man. There are cases of exophthalmos, however, without a large goiter. It is not correct to assume that the amount of secretion is decreased in proportion to the size of the piece of gland removed. As a matter of fact, there is sometimes a degeneration of the remaining tissue after operation, and it must be assumed that the stimulus which led to the hypersecretion is overcome by the operation. On the other hand, in simple goiter (not Basedow's), where it would seem that hypertrophy would take place to compensate for functioning tissue removed, there is also a decrease in the size of what is left. Here it would seem that conditions are brought about by the operation that render the remainder of the tissue capable of functioning. Simple surgical operations, without extirpation, such as separating the isthmus by Sydney Jones's method, seem also to give rise to a stimulus which causes a decrease in the size of the goiter. This is to be explained by the fact that there are cases of goiter in which hypothyroidism exists (Leopold Levy, Rothschild). Observations should be made to determine whether, on operation of such cases, the hypothyroidism disappears. Cases of Poncet, Neudörfer, and Cathcart seem to show that it does, as well as some of the author's experiments on dogs who were cretins. The author proposes in myxœdema with goiter, infantile myxœdema, and endemic cretinism, to bring about by operation a change in the condition of the gland that will conduct the secretion into normal paths.

BIERNATH.

Jones, E. O.: A Method of Controlling Hæmorrhage in Thyroidectomy. *Surg., Gynec. & Obst.*, 1913, xvii, 642.

By Surg., Gynec. & Obst.

In a small percentage of thyroidectomies, unusual difficulties caused by profuse hæmorrhage are encountered. The superficial location of the superior thyroid artery renders hæmorrhage from this source easily controlled. The deep situation and intimate relations of the inferior thyroid artery render control of hæmorrhage from this vessel more difficult. The early method of exposing and ligating this artery by dislocating the gland forward and inward was followed so often by injury to the recurrent laryngeal nerve and parathyroid bodies that it has been abandoned in favor of the modern "intracapsular" operation.

By a study of the various layers of the cervical fascia and the spaces lying between them, the steps of a procedure have been devised by which the inferior thyroid artery may be ligated with safety behind the carotid sheath and at a distance from the thyroid fascia, after which the usual "intra-

capsular" operation can be carried out without the difficulties and annoyances of profuse hæmorrhage.

The operation is not recommended as a routine procedure, but is to be employed with very vascular goiters where profuse hæmorrhage is to be expected. Enough capillary circulation remains to ensure the vitality of the parathyroid bodies. The steps of the operation have been worked out on the cadaver and applied in one operation of thyroidectomy with success.

Freeman, L.: The Use of the Wire Clamp in Operations for Goiter. *Tr. Western Surg. Ass., St. Louis, 1913, Dec.* By Surg., Gynec. & Obst.

Goiter operations may be made safer and easier in most instances, according to the author, by the use of a simple wire clamp. After dislocating the lobe to be removed, a section of wire, about No. 17, is placed along either side of its base, the two wires

being tied firmly together by ligatures passing through the glandular substance, thus clamping it firmly. The lobe is then cut away beyond the clamp and the stump whipped over with catgut to control the bleeding, the wires being then removed.

The advantages of the wire clamp are: (1) It may be adjusted to almost any goiter; (2) hæmorrhage is perfectly controlled; (3) the tissues are not crushed; (4) there is no danger to the recurrent laryngeal nerves or parathyroid bodies, and (5) the wires cannot slip from the stump, being held by the ligatures passing through it.

Forceps are inferior to the wire clamp, because they cannot be adjusted to every case, they crush the tissues, and they may slip from the stump when the gland is cut away beyond them.

The method seems particularly adapted to parenchymatous, vascular goiters of moderate size, such as are so often seen in Graves's disease.

SURGERY OF THE CHEST

CHEST WALL AND BREAST

Gosset, A., and Masson, P.: Anatomo-Pathological Study of 75 Cases of Cancer of the Breast (Soixante-quinze cas de tumeurs du sein; étude anatomo-pathologique). *Rev. de gynéc. et de chir. abdom.*, 1913, xxi, 257. By Journal de Chirurgie.

The most frequent disease of the breast is cystic mastitis. The mammary gland is a modified sudoriparous gland and its most specialized and fragile part is the acinus. Affected by inflammations the excretory canals may be obstructed by proliferation of either connective tissue or epithelium. This obliteration leads to an accumulation of the fluid secreted, and if the cells of the acini are resistant, the acinus becomes cystic; if not, after temporary dilatation, the acinus atrophies. Finally, by a process of hyperplasia, papillæ are formed projecting into the cavity. This is the beginning of a dendritic adenoma. If there is more connective tissue than epithelium, a fibro-adenoma results. If the epithelium is in excess, the cystic cavity is filled up with an epithelial mass and a lesion is formed intermediate between benign adenoma and infiltrating carcinoma. This explains the coexistence of cystitis and cancer. The examination of many sections has shown the authors how frequent adenomatous lesions are, even if they are very small, in cystic disease. They believe that the coexistence of cystitis and cancer is not the exception, but the rule, and that cancers develop much more frequently in cysts than in the surrounding normal gland.

The authors conclude by saying that cystitis, the inflammatory nature of which is demonstrated, is a predisposing cause of cancer. For a certain length of time the cancer is not evident, clinically; it can only be shown by histological examination. It is at this stage that operation would be effective, and the ideal way would be to operate only on microscopic

cancers. Pieces should be removed for section and examination, and the results would frequently indicate immediate and complete removal. This would avoid the rapid development to which insufficient operation sometimes gives rise.

GEORGES LABEY.

Lapham, M. E.: The Surgical Treatment of Pulmonary Tuberculosis. *Boston M. & S. J.*, 1913, clxix, 676. By Surg., Gynec. & Obst.

The author criticises the present attitude of treating pulmonary tuberculosis merely by fresh air, good food, and medical care. Many cases which run a rapid course can be arrested if the lung is collapsed and the diseased tissue put at rest. The collapsing aids drainage and allows connective-tissue infiltration to take place.

The best method of collapsing the lung which we have at present is by the introduction of nitrogen. This, however, has several disadvantages. The pleural cavity is closed and the pressure is apt to be either above or below the atmospheric pressure. This difference in pressure leads to many circulatory disturbances. It is reasonable to suppose that if the pressure inside the pleural cavity were a constant pressure, as compared with the pressure in the lungs, fewer circulatory disturbances would result. The author believes that the best way to bring about this constant relative pressure is to connect the pleural cavity with the outside by means of a tube with a cap on the outside. By removing the cap the intrapleural pressure could be raised or lowered.

Other methods which the author suggests for bringing about the collapse of the lung are as follows: (1) The Wilms or Sauerbruch operation, which consists in the resection of all the ribs from the first or second extending to the tenth or eleventh.

This method is useful, when extensive adhesions of the pleura prevent the formation of an artificial pneumothorax by means of nitrogen. (2) The method of Baer is applicable when the cavity is too far up in the apex to be affected by an artificial pneumothorax. Baer resects the second rib, works the costal pleura free with the finger and directly compresses the cavity by tamponing.

J. H. SKILES.

Beckman, E. H.: Observations on Empyema.

St. Paul M. J., 1913, xv, 533.

By Surg., Gynec. & Obst.

The pathology of empyema shows that as soon as there is an accumulation of purulent material within the pleural cavity, either local or general, nature regards it the same as an abscess in any other part of the body and attempts to limit absorption by walling it off. In operating on some of the late cases, the thickness of this limiting membrane was often found to be from one-half to nearly one inch in thickness. As the fluid accumulates in the pleural cavity, the unyielding wall of the thorax prevents expansion in this direction, and room is found for the accumulation by compression of the lung. If the empyema has continued for any considerable length of time, this membrane is so resistant that the lung cannot re-expand after the fluid has been allowed to escape by free excision.

It is evident, then, that if free drainage is established before these adhesions form or before they become firm enough to hold the lung in a state of collapse, the lung would quickly obliterate the cavity and the patient be rapidly restored to health. This corresponds exactly to the results obtained with free drainage in the early cases. It should be remembered that empyema is not a disease of the lung, although pulmonary disease and empyema may exist at the same time, and that the pulmonary tissue is only slightly or not involved at all in the inflammatory process in a very large majority of the cases.

In the recognition of small empyemas, we have chiefly to remember the relationship between pneumonia, other infections, and this secondary infection, and therefore to be on our guard if the development of the general phenomenon of infection occurs or persists after the pneumonic or other infectious process has apparently subsided. Pain continuing after the crisis in pneumonia in a certain localized area, although it may not be severe, and accompanied by a septic temperature, almost surely indicates a localized empyema. The localization of the pus can often be determined by the pain and localized tenderness on the wall of the chest.

The aspirating needle is often of the utmost service in arriving at a correct diagnosis in these cases. While many writers warn us of the dangers that may occur from introducing a needle into the pleural cavity, Beckman thinks that more good in the way of arriving at an early diagnosis is to be

gained from its use than the dangers that may come from a late recognition of empyema.

A radiogram of the chest is of great value in arriving at a correct diagnosis in obscure cases. It is often an extremely difficult and sometimes an impossible task to determine what the picture shows. It must be kept in mind that the X-ray picture is the reproduction of a shadow and that a thickened pleura may cast as dense a shadow as an accumulation of fluid.

Poensgen, F.: Reciprocal Relations Between the Thymus, the Thyroid, and the Lymphatic System (Beitrag zur Frage der Wechselbeziehungen zwischen Thymus, Schilddrüse und lymphatischem System). *Med. Klin.*, Berl., 1913, ix, 1504.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The pathological anatomist is impressed on examining the thymus with the manifold variations, not only in the formation of the entire gland, but in the relations of the cortex and medulla and in the persistence of epithelial elements. Microscopically, remnants of the thymus can be detected at the most advanced age. Virchow's and Von Hanseman's assertion that goiter was generally connected with an enlarged thymus could not be confirmed from the very abundant goiter material at the Freiburg Pathological Institute. Neither could a relation be determined between persistence of the thymus and the formation of lymphatic foci in the thyroid, but the marked involvement of the thymus in two cases of lymphatic leukemia and the frequency of the status thymico-lymphaticus indicate a close relationship of the gland to the lymphatic tissue. In rickets and in chondrodystrophy (2 cases) there were no characteristic changes in the thymus. TÖLKEN.

Kolb, K.: Can a Persisting or Hyperplastic Thymus Be Demonstrated with Abderhalden's Ferment Reaction (Gelingt es mittelst der Abderhaldenschen Fermentreaktion, den Nachweis einer persistierenden oder hyperplastischen Thymus zu führen)? *München. med. Wchnschr.*, 1913, lx, 1642.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

A hyperplastic Basedow thymus gland cannot be demonstrated with certainty by percussion or the röntgen picture. The blood serum of healthy persons, as Kolb was able to show in the case of 17 adults, contained no ferment capable of decomposing the tissue of the thyroid, thymus, or liver. The normal thymus of youthful individuals in the process of involution cannot be shown by Abderhalden's ferment reaction. In six cases of Basedow's disease at Wilm's Clinic, thyroid split-products were found in four cases and marked splitting of the thymus in all cases. The ninhydrin test was just recognizable in four out of seven cases of endemic goiter. Kolb urges a test of the splitting power of the serum in cases of status thymo-lymphaticus, in thymus new growths, and before and after thymectomy.

KLOSE.

TRACHEA AND LUNGS

Segura, E. V.: A Case of Cylindroma of the Trachea; External Operation; Recovery (Un cas de cylindroma trachéal; opération par la voie externe; guérison). *Ann. d. maladies de l'oreille*, 1913, xxxix, 162.
By Journal de Chirurgie.

The author reports a case of cylindroma of the trachea operated upon externally, followed by recovery. The patient was a woman of 42, whose previous history was negative. Early in 1909 she began to be fatigued on the slightest effort, and this symptom grew worse. She first took anti-asthmatic and then anti-syphilitic treatment without success. In January, 1911, the dyspnoea was so intense that she was obliged to remain constantly in a sitting position and take inhalations of oxygen.

In April, 1911, Segura found at the level of the fourth tracheal ring a smooth pyriform tumor, with its large end downward, covered with normal mucous membrane. It occupied almost the entire lumen of the trachea.

A local anæsthesia was produced with cocaine-adrenalin, and the anterior surface of the trachea was exposed by an incision 5 or 6 cm. long. It was opened by a median incision through five rings, and it was found that the upper two-thirds of the tumor were adherent, the lower third free. Three-fourths of the tumor was removed with a snare, and the base was removed with a punch forceps. The hæmorrhage was very slight, and the trachea immediately resumed its normal caliber. Segura did not insert any tracheal cannula, and he simply replaced the parts without any suture—first the edges of the tracheal wound, and then the soft parts. The wound was covered with a dressing that exerted a moderate degree of compression.

The healing was rapid, and eight days after the operation the patient left the hospital completely well. In October, 1912, there had been no recurrence.

A histological examination showed that the tumor was a cylindroma, a type of tumor that generally develops in the neighborhood of salivary glands, and may be regarded as a benign tumor, though it frequently gives rise to recurrences.

GEORGES LAURENS.

Ghoreyeb, A. A., and Karsner, H. T.: A Study of the Relation of the Pulmonary and Bronchial Circulation. *J. Exp. Med.*, 1913, xviii, 500.

By Surg., Gynec. & Obst.

In order to appreciate the possibilities of the circulation in the lungs in various pathological conditions, the authors injected the pulmonary and bronchial arteries, simultaneously, under measured pressure.

The pressures were varied in the two vessels in a series of experiments. The work was done on anæsthetized dogs and, when complete, the vessels were clamped, the specimen removed and placed in fixing solution.

They found that as long as definite pressure is

maintained in either system, the admixture is extremely limited. If, however, the pressure in either system drops to zero, the admixture is evident. It was found that it takes much longer for the mass injected through the bronchial arteries to penetrate to all parts of the lung than when the injection is made through the pulmonary artery, but, when completed, the injection reaches to all capillaries including those of the pleura. On the other hand, the injection of the bronchial vessels by way of the pulmonary system is not complete, under normal pressure, but this is rapidly accomplished when a high pulmonary pressure is used.

The conclusion is drawn that either circulation can supply the simple nutritive demands of the lung if the other should be interfered with.

JAMES F. CHURCHILL.

Segura, E. V.: Mycoses of the Mucous Membrane of the Respiratory and Upper Digestive Tracts (Considérations sur les mycoses des muqueuses des voies respiratoires et digestives supérieures). *Arch. internat. de laryngol.*, 1913, xxvi, 48.

By Journal de Chirurgie.

The author reports 11 cases of mycosis of the respiratory and upper digestive tracts, which he believes were due to sporotrichosis, although the sporotrichium was not discovered in the majority of them.

The lesions had the typical appearance of sporotrichosis, ulcerations with ragged edges, secreting sero-pus in the center. In the nasal fossæ the ulcers were covered with thick crusts, and in some places there were little yellow spots representing follicular projections. In one case there was destruction of the uvula and pillars; in another, the epiglottis was covered with papillomatous vegetations; and in the eleventh case, there was a sporotrichosis that had degenerated into a neoplasm.

In the cases where the sporotrichium was not discovered, the author established his diagnosis partly by the appearance of the lesions, but more particularly by the exclusion of tuberculosis and syphilis. None of the patients showed a positive Wassermann, and all except the last, in which there was a neoplasm, recovered in 20 to 30 days with small doses of iodide of souffron. Several of these patients had been treated with mercury without success.

Heretofore, in all cases of sporotrichosis of the mucous membrane (which cases are very rare, however), the germs have been found in abundance. The above cases show that this is not always true, and that what is found in cutaneous lesions may also be found in lesions of the mucous membrane. In cutaneous cases the parasite is found only occasionally. Segura believes that sporotrichosis of the mucous membrane is much more frequent than it has been believed to be; many cases of recovered cancer of the throat, of lupus, of tuberculosis, and of syphilis, he thinks, have been improperly diagnosed cases of sporotrichosis.

GEORGES LAURENS.

PHARYNX AND ŒSOPHAGUS

Torek, F.: The First Successful Resection of the Thoracic Part of the Œsophagus for Carcinoma (Bericht über die erste erfolgreiche Resektion des Brustteiles der Speiseröhre wegen Carcinom). *Deutsche Ztschr. f. Chir.*, 1913, cxxiii, 305.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

More than a year ago, a 67-year-old woman was operated upon for carcinoma in the middle of the Œsophagus extending downward 4.5 cm. from the lower edge of the aortic arch. Some time before, a Witzel's stomach fistula had been made. An incision was made through the posterior end of the seventh intercostal space. The fourth, fifth, sixth, and seventh ribs were resected near the tubercle. The adhesions between the lungs, costal pleura, and diaphragm were then loosened. The tumor was found to be slightly movable. The Œsophagus was loosened first below and then above the tumor and the vagi were dissected. A few small branches of the vagus crossing the tumor were cut without any disturbance of the pulse.

It was very difficult to dissect the part of the Œsophagus behind the aortic arch. This difficulty was finally overcome by ligating and cutting a number of the thoracic branches of the aorta and lifting the aorta out of the way. The tumor was adherent to the left branches and in freeing it an incision was

made lengthwise of the bronchus. This incision was sutured with silk. The Œsophagus was dissected from a point 2.5 cm. above the diaphragm to the neck and burned through with the cautery below the carcinoma after double ligation. The Œsophagus, with the tumor, was drawn through an incision along the anterior border of the sternocleidomastoid. The lower stump was ligated in a fissure previously made by crushing. The stump was invaginated with two purse-string sutures. The thorax was closed with silk sutures at the seventh and eighth ribs. The wound was not drained. The carcinoma was removed and the Œsophagus sewed into skin wound. The incision in the neck was then closed.

The skin and muscle incisions were made under local anæsthesia; general narcosis was then induced by the Melzer-Auer method of tracheal insufflation. The intrathoracic part of the operation from the incision of the pleura to the closing of the thoracic cavity lasted 1 hour and 45 minutes; the entire operation 2 hours and 43 minutes. Nourishment was given until the eighth day with a gastrostomy tube and funnel. At the end of that time the free end of the gastrostomy tube was inserted into the end of the remaining Œsophagus and the patient is now able to swallow her food.

Bort.

SURGERY OF THE ABDOMEN

ABDOMINAL WALL AND PERITONEUM

Quain, E. P.: The Necessity of Conserving the Intercostal Nerves in Abdominal Incisions; An Experimental Study. *Tr. Western Surg. Ass.*, St. Louis, 1913, Dec. By Surg., Gynec. & Obst.

The author had occasion to operate on several patients, who had previously been operated on through lateral abdominal incisions placed in such a way as to sever intercostal nerves. The findings in such cases suggested a possibility that the omentum may have a greater tendency to adhere permanently to that part of the abdominal wall which has been deprived of intercostal nerve supply than to any other part of the parietal peritoneum.

In a series of experiments on dogs and rabbits, undertaken in an effort to determine whether these observations were correct, the following plans were adopted: In group 1, the lower intercostal nerves were severed on one side through an incision near the costal margin without damaging the peritoneum. In group 2, an incision was made in the linea alba, both sides of the parietal peritoneum were rubbed with gauze, care being exercised to apply an equal amount of trauma on each side and the wound then closed. Through a second incision at the costal margin on one side segments of the intercostal nerves were removed. In group 3, the same operations were made as in group 2, with the addition of tincture of iodine, gastric, or intestinal contents,

applied in weak solutions to the peritoneum on each side.

At autopsy there were no macroscopical changes in group 1. In group 2, pathological changes, especially adhesions, were more marked on the enervated than on the normal side, in seven of the eight experiments. Microscopical sections showed a more chronic infiltration and a delay in the reparative process in the enervated peritoneum when compared with corresponding sections from the normal side. In group 3, the same general results were obtained as in group 2, but somewhat more marked.

A summary from 15 experiments in groups 2 and 3 shows that adhesions were confined to the side of nerve extirpation in eight animals; two of the three cases with bilateral adhesions had most of the adhesions on the operated side; fibrin deposits were limited to the enervated side in one case; and one animal, without adhesions, had a more marked peritoneal infiltration on the operated side. There were three negative experiments. Hence, 80 per cent of the experiments gave a positive answer to the question as to whether the destruction of the intercostal nerve supply is of pathological significance to the peritoneum.

That adhesions and chronic infiltration are more likely to follow trauma and infection on an enervated than on a normal peritoneum, are facts which argue strongly against lateral longitudinal incisions and in favor of transverse incisions.

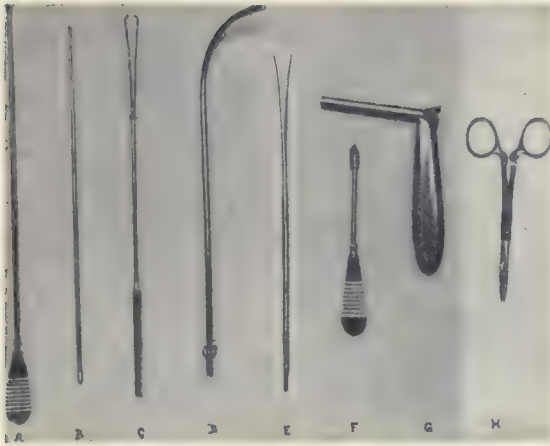


Fig. 1. (McDill.) A, Sim's uterine sound; B, same with handle removed, blunt end perforated and probe pointed, making the "Bodkin;" C, a 25 cm. (10 inch) Emmet's cotton carrier; D, a No. 14 standard gauge catheter; E, the "Silk Carrier," made from C and D; F, trocar for the Kelly endoscopic tube; G, used as cannula; H, Péan forceps.

McDill, J. R.: Chronic Ascites: Treatment and Drainage by Lymphangioplasty Through a Trocar Wound Under Local Anæsthesia; An Experimental Study. *Surg., Gynec. & Obst.*, 1913, xvii, 523. By Surg., Gynec. & Obst.

In this study and series of experiments the author attempts to show that the relief of ascites after operations which herniate an abdominal organ, or which implant silks from the peritoneal cavity to the subcutaneous spaces, is probably not from collateral circulations in the one case or from capillary drainage in the other, but is due to leakage of the fluid alongside the marsupialized organ or the implanted silks, which are prevented from uniting to the surrounding tissues firmly enough to hold in water under pressure by this pressure itself, and also by the normal and constant movements of the abdominal wall. The speedy replacement after tapping of large quantities of fluid, rich in proteins, salts, and the characteristic constituents of the tissues and fluids of the body which are necessary to metabolism, makes the patient pay very dearly for relief from distention, and greatly shortens the remaining period of life.

In his experiments McDill made use of rabbits, and devised a simple technique by which the plan can be tested clinically. Various materials were tried and No. 20 silk was found the most practicable. In thirty days the intraperitoneal end was found to have become converted into a silk connective-tissue peg covered with a dense membrane, making it impossible as a capillary drain; around this peg the peritoneum was puckered and everted and not strongly attached to the silk.

The instruments can be made from old tools

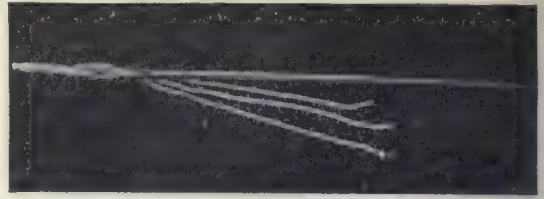


Fig. 2. (McDill.) The three pieces of No. 20 silk with about 4 cm. (1½ inches) of their ends stitched firmly together with fine silk, held in the silk carrier ready for insertion through the cannula.

found in any doctor's office, as shown in Fig. 1. The Kelly tube with trocar and the Pean forcep are not essential; any cannula may be used that will take the "carrier" when loaded with the silk.

The technique consists in (1) paracentesis just above the pubis and 5 cm. (2 inches) from the median line; making sure that the cannula is in, because on account of the recumbent position of the patient very little fluid will flow; (2) the silks are passed, as in Fig. 2, through the cannula until about 2½ cm. (1 inch) project beyond the parietal peritoneum; holding it exactly in place, the cannula is slipped out over the "carrier," and the three ends, which have been cut to the desired length, are thrust, using the bodkin, eye first, downward and in three directions into the subcutaneous fat; (3) the "carrier" is removed, without disturbing the silk, the bends of the silks are tucked in and the opening is sutured very snugly. When these special instruments are not available the silk can be planted through a short incision, under local anæsthesia, with one stitch to anchor it to the deep fascia; also, after an exploration, when it is indicated, the silk can be easily inserted in one or both sides before the abdomen is closed.

The author's conclusions are:

1. Ascites patients have an impaired vital resistance, deficient powers of repair, and do not well endure extensive operations under a general anæsthesia; a number of the formidable operations have been successful, but the death rate is 20 per cent; if this simple procedure will provide a gradual drainage of the peritoneal pond it will be a desirable addition to existing methods.

2. The operation is not much more serious than a simple paracentesis, and other silks can be inserted at any subsequent tapping until there is sufficient drainage; pressure by intraperitoneal fluid is desirable, after this operation, to weaken the line of union between the silk and the surrounding tissues, but if it becomes too distressing a tapping may be necessary to give temporary relief; permanent drainage may not become established until two or three months after an operation.

3. The permanency of any improvement will depend upon the correction of an intestinal toxæmia when present, rest in bed when indicated, total withdrawal of alcohol, a bland and almost salt-free

diet, and attention to any cardiovascular-renal disturbances. Although a liver cirrhosis with the atrophic tendency cannot be cured, its physiological balance can be restored in many cases, and life may be greatly prolonged in comfort and freedom from disability.

I. R. McDILL.

Veit, J.: Questions in Regard to the Peritoneum, from the Author's Experience (Peritoneale Fragen nach eigenen Erfahrungen dargestellt). *Prakt. Ergebn. d. Geburtsh. u. Gynäk.*, 1913, v, 195.
By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The first question deals with the covering of intraperitoneal wounds with peritoneum. Veit believes that the peritoneal covering of all abdominal wounds, as demanded by Bumm, is unnecessary if the operation is strictly aseptic; formation of adhesions is to be feared only in case of infection. According to experiments by Dembowsky and Lamers, no adhesions form over the gaps in the peritoneum if there is no infection. The reparative process begins from the edges of the wound and proceeds much more rapidly than it does in the epidermis. The author thinks that the mere lowering of the stumps in simple ovariectomy, without covering them with peritoneum, is justified. He covers with peritoneum only in operations where there is fear of oozing of infectious material; in aseptic operations he leaves the connective-tissue spaces in communication with the abdominal cavity.

If the contents of the tube is purulent, or if, on sectioning it, he cannot be sure whether the contents is free from bacteria, he covers the stump with peritoneum as in appendicitis. If he has to open the vagina in a laparotomy, and remove the uterus also, he provides for the dryness of the abdominal cavity and for aseptic healing by insuring free drainage of the abdominal cavity. He accomplishes this by allowing the patient to get out of bed daily for the first four or five days after the operation and sit in a chair.

The second question concerns the protection of the abdominal wound. In order to keep the wound entirely free from germs during the operation, he covers it entirely with Billroth gauze, by Koeberle's method, and covers this over with metal. For this purpose he uses an abdominal speculum, which he has had made by Windler of Berlin. He has had excellent results with this method.

KOLB.

Hancock, J. C.: Coincidence of Umbilical Hernia with Gall-Stones. *Tr. Western Surg. Ass., St. Louis*, 1913, Dec.
By Surg., Gynec. & Obst.

Scant mention is made in the literature of the association of a certain class of umbilical hernia and gall-stone disease. While the author's series of cases (seven) is too small to establish more than coincidence, common etiological factors are significant of more than coincidence. The type of hernia cases is that of fleshy middle-aged individuals, mostly women who have borne children.

Besides the principles of the causation of hernia in general we have, in the umbilical variety, pregnancy as the conspicuous form of trauma. Of 134 cases in males over 15 years old, only 15 cases occurred having an umbilical hernia only, while 95 had bilateral and 12 unilateral inguinal hernia besides. In 494 cases of umbilical hernia in women, 438 cases of this form alone were present and only 56 combined with other forms. Of the 494 umbilical hernia cases in women, 429 had had one pregnancy and 377 had had plural pregnancies; with two exceptions the parous cases developed hernia only after labor.

Of pathological bases for umbilical hernia, obesity is common and striking. Denk reports four nulliparæ as having umbilical hernia, but three of them were uncommonly fleshy, and the fourth, otherwise spare, had an enormous ovarian cyst. Of the author's cases all were fleshy to distinct obesity.

In respect to age, umbilical hernia in the female, over 30 years old, is common compared with those occurring earlier, and especially compared with the male of like age — with one exception in the author's cases, of a woman past 30 years of age, all were more than 40 years old.

Constipation is a conspicuous feature in these cases, and intestinal stasis may act as a contributory cause or may be an effect of umbilical hernia. Comparing the factors of contributory causes of umbilical hernia with those of gall-stone disease we see a close relation. In respect to sex we see the proportion of three cases of gall-stone disease in women to one in men. In regard to age, nearly 50 per cent of all cases of gall-stone disease occur in people above 40.

Ninety per cent of women with gall-stones have had one or more pregnancies. Obesity in women with gall-stone disease is common but not so conspicuous as in umbilical hernia. Constipation and intestinal stasis are as important factors in the causation of gall-stone disease as in umbilical hernia.

In conclusion, it would appear indicated, in treating umbilical hernia of the type described, to search the history for symptoms, and at operation to examine for proof of gall-stone disease.

Gussew, V.: Treatment of Incarcerated Hernia, Based on 420 Cases (Beitrag zur Therapie der eingeklemmten Brüche auf Grund von 420 Fällen). *Deutsche Ztschr. f. Chir.*, 1913, cxxiv, 155.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Gussew reports 420 cases of incarcerated hernia observed in the surgical section of the Children's Hospital at Riga, from 1902 to 1912. The statistics must be read in the original. He reports the following unusual cases, which are described in detail: One case of hæmorrhage into the hernial sac; 3 of reduction en masse; 1 of rupture of the hernial sac and mesentery; 3 of volvulus; 3 of replacement of a gangrenous loop of intestine; 4 of rupture of the intestine; 1 of hæmorrhage of the intestine; 2 of diaphragmatic hernia.

In gangrenous hernia, primary resection of the

intestine is the operation of choice. In 24 per cent of the cases of intestinal suture there was insufficiency of the sutures; in 53 per cent of those united by Murphy buttons there were fæcal fistulæ. In 7 cases in which there was a history of hernia, but no attempt at reduction had been made and the hernia was not visible, there was incarceration at the internal inguinal ring, making diagnosis difficult.

There were two cases of mistaken diagnosis—once in a case of preperitoneal lipoma, and the second time in a case of appendicular peritonitis in the hernial sac. The mortality for the 420 cases was 27 per cent. The author thinks that this percentage can be reduced by more frequent use of local anæsthesia; improvement of operative technique; by sending the patients for operation as soon as possible; and by general practitioners giving up attempts at taxis.

KOLB.

De Garmo, W. B.: Accidental Wounds in Hernia Surgery. *N. Y. St. J. Med.*, 1913, xiii, 571.

By Surg., Gynec. & Obst.

This paper is the result of observations based on 2000 personal operations. The author calls attention to the fact that the urinary bladder not infrequently is found in hernial sacs. He was able to collect thirty-one cases in his series. It is important that this possibility be kept in mind so that injury to the bladder may be avoided during the course of an operation for hernia. De Garmo is of the opinion that the high mortality following bladder injuries has been due to the fact that the accident is not discovered at the time and immediate repair made. It is imperative that no matter how slight the injury may be, if the integrity of the bladder wall has been disturbed, it must be immediately and carefully restored.

The author mentions three distinct forms of bladder hernia as follows:

1. The bladder may protrude within a large hernial sac with other contents of the abdomen. This form is undoubtedly more common than is supposed, but it is reduced when the patient comes to operation and is therefore undiscovered.
2. The bladder is dragged into the hernial opening by the peritoneum or the transversalis fascia.
3. When the mucosa is herniated through the muscular layers of the bladder, forming a diverticulum. This is the most treacherous of all types, as the membrane closely resembles hernial sac.

The first type is intraperitoneal; the second, either wholly or partially extraperitoneal; and the third type always extraperitoneal. H. L. KRETSCHMER.

GASTRO-INTESTINAL TRACT

Eusterman, G. B.: Incidence and Diagnostic Value of Blood, or Hæmorrhage, in Gastric and Intestinal Lesions; Clinical and Statistical Study. *Tr. Western Surg. Ass.*, St. Louis, 1913, Dec.

By Surg., Gynec. & Obst.

Repeated hæmorrhage in the presence of a preceding history of gastric disturbances with pain or

distress signifies an ulcer of the duodenum or stomach in more than 90 per cent of the cases. In about 1½ per cent of all cases of gastric and duodenal ulcers, operatively demonstrated, single or repeated gastro-intestinal hæmorrhage with almost complete absence of pain or gastric disturbances was noted.

Examination of the gastric contents and meat-free stool, for occult blood, is of undisputed value in the differential diagnosis of doubtful cases and in estimating the effectiveness and duration of dietetic and medicinal treatment. However, positive occult blood findings, unless taken in conjunction with the clinical symptoms and physical findings, may lead to wrong conclusions.

In 568 proven cases of duodenal ulcer, single or repeated hæmorrhage, by mouth or bowel or both, occurred in 19½ per cent; in 249 cases of gastric ulcer, in 23 per cent. In disease of the gall-bladder gross bleeding in variable amounts occurred in 2 to 4 per cent; in chronic and subacute appendicitis, in 1 to 2 per cent.

Positive occult or altered blood findings in order of frequency are incident to gastric cancer, chronic simple ulcer of the duodenum and stomach, disease of the gall-bladder and appendix. Altered blood was present in the gastric extracts in 75 per cent of 688 cases of gastric cancer, in 17 per cent of 497 gastric analyses in 568 cases of duodenal ulcer, and in a general average of 28 per cent in 343 cases of gastric ulcer. In 228 analyses of 500 gall-bladder cases, positive occult blood reactions were obtained in 43 per cent, or in 19.6 per cent of the total (tr. guaiac or benzidin tests). In 110 analyses of 500 cases of appendicitis, a positive reaction with similar reagents was present in 24 per cent, or in 5.4 per cent of the total.

Myer, J. S.: Polyposis Gastrica: Polyadenoma. *J. Am. M. Ass.*, 1913, lxi, 1960.

By Surg., Gynec. & Obst.

Myer reviews the literature of this universal condition, the etiology of which is as obscure as that of other growths. Chronic gastritis is a factor in its development. Macroscopically, the polyps in previously reported cases were small and pedicled, varying in size from the size of a lentil to that of a pea, of soft consistency, and never adherent to each other. The polyps sometimes numbered several hundred and were all of about the same size. They may develop from any part of the stomach mucosa. The portion of mucous membrane of the stomach not involved in the polyp formation usually shows macroscopical characteristics of a chronic gastritis; enlarged lymph-nodes are often present also. Myer reports his case in full, it being, with one exception, the only one in which the diagnosis was possible prior to operation or necropsy. He offers the following conclusions:

1. Though the diagnosis was made possible in this case through the presence of small polyps in the wash-water during lavage, which also occurred in Chosrojeff's case, and the presence of a large polyp

in the faeces following hæmorrhage, it would seem that at least a probable diagnosis might be made in future cases without this conclusive finding.

2. The röntgenographical and fluoroscopical examination in a case as extensive as the one reported here should always be helpful. The mottled appearance of the entire right half of the stomach, as though the bismuth were trickling through and around numerous masses, together with the irregular and indefinite outline of the stomach, could be produced only by such a condition as described in this case or by a most extensive malignant disease, which would readily be differentiated by other means.

3. Achylia gastrica, together with an unusual production of mucus, should always arouse suspicion. Ordinarily, in achylia gastrica, mucus is not encountered in the wash-water, either in the large quantities here described or with the peculiar egg-white character one would expect in the great multiplication of goblet-cells.

4. The repeated presence of fresh blood, microscopically, in gastric contents removed with care, or in the wash-water, is indicative of a redundant, vulnerable condition of the mucosa, from which bits of tissue are readily removed by the tube.

5. In severe acute gastric hæmorrhage in a patient with achylia gastrica, abnormal mucous production, and normal or increased gastric motility; polyposis is more than probable. **LEO G. DWAN.**

Erdmann, J. F.: Fibroma Cardia in a Girl of Eighteen; Gastrostomy and Enucleation. *Am. J. Obst.*, N. Y., 1913, lxi, No. 5.

By Surg., Gynec. & Obst.

The author reports a case of a girl 18 years of age who, for four years, except for several attacks of hæmatemesis, had suffered from rather ill-defined stomach symptoms, and was regarded and treated by a number of physicians as suffering from ulcer of the stomach. Because of an increase in the subjective symptoms, operation was resorted to. The condition of the viscera was found to be normal, except that upon palpation of the cardia a tumor was found. A gastrostomy was done and the tumor, which was the size of an egg and had the appearance of a prostate, was found attached to about one-fifth of the circumference of the cardia. By blunt dissection the tumor was easily removed. A couple of bleeding points were ligated; the stomach was closed, and a small abdominal drain inserted. The patient recovered. **N. SPROAT HEANEY.**

Kawamura, K.: The Digestion of Living Tissue in the Stomach; and a Study of the Pathogenesis of Round Ulcer of the Stomach (Zur Frage der Verdauung lebenden Gewebes im Magen, zugleich ein Beitrag zur Pathogenese des runden Magengeschwürs). *Mitt. a. d. Grenzgeb. d. Med. u. Chir.*, 1913, xxvi, 379.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

In numerous experiments on dogs, parts of the stomach, intestinal walls, and spleen were subjected

to the digestive action of the gastric juice under special experimental conditions. These living tissues were not attacked by the gastric juice so long as the circulation in them was undisturbed. Only after necrosis had begun, as a result of circulatory disturbances, was there any sign of digestion taking place. In experiments with artificial acid *in vitro* the bits of stomach wall were digested first; the complete digestion of the pieces of small and large intestine and spleen taking two or three times as long.

If equal-sized pieces of mucous membrane from the stomach, the small and the large intestine, or the fluid expressed from these tissues were added to fresh gastric juice, according to Katzenstein's conditions, the stomach was digested first, while the presence of the intestinal mucous membrane had a more or less inhibitory effect on the digestive power of the gastric juice — the presence of splenic tissue was markedly inhibitory. The addition of blood serum also decidedly inhibited the digestive action of the pepsin.

From the experiments, the author concludes that antipepsin is found in the blood, and is demonstrable not only in the stomach, but in various other organs. An ulcer of the stomach can arise only when, from circulatory disturbances, there is a lack of antipepsin in a circumscribed area in the stomach.

WORTMAN.

Lockwood, C. D.: Ulcer of the Stomach in Children, Before Puberty. *Tr. Western Surg. Ass.*, St. Louis, 1913, Dec. By Surg., Gynec. & Obst.

Reports of round ulcer of the stomach in children before puberty are rare, but the author believes it to be more common than is generally believed. After recognizing a case of ulcer in a girl of 13 years and successfully operating upon her, the author was stimulated to investigate the subject from the surgical point of view.

After a brief discussion of the etiology, pathology, and diagnosis of ulcer in children, the author's case is reported. A girl of 13, previously in good health, was suddenly seized with severe pain in her left side, which was thought to be due to pleurisy. She soon complained of abdominal pain, localized at times in the epigastrium and at other times in the lower abdomen. Her chief complaint was pain, worse at night, and paroxysmal in character; she was constipated and complained of being hungry. A diagnosis was made, chiefly by means of palpation. During a paroxysm of pain, gas could be felt gurgling through the pylorus, followed by immediate relief. The author believes this to be a diagnostic sign of great importance. The diagnosis was confirmed by the finding of blood in the stomach contents and stools and later by operation. An anterior gastroenterostomy was done with complete relief of symptoms for three months. Then there was gradual loss of weight and recurrence of all the symptoms. At second operation the tissues were so infiltrated and cartilaginous that further operation was useless. A post-mortem examination disclosed a perforated

gastric ulcer on the greater curvature, with carcinomatous degeneration at the site of the ulcer, and metastasis of the pancreas, liver, glands, etc.

The author reports ten other cases collected by him which have been treated surgically, and all cases of gastric ulcer reported in medical literature, about 125 in all.

Smithies, F.: The Significance of Gastric Ulcer with Respect to Gastric Cancer; Study of 566 Consecutive Operatively and Pathologically Demonstrated Cases of Cancer of the Stomach. *J. Am. M. Ass.*, 1913, lxi, 1973.

By Surg., Gynec. & Obst.

Smithies presents an analysis of 566 operatively and pathologically demonstrated cases of gastric cancer from the Mayo Clinic, and offers the following summary:

1. A number of cases clinically admitting only a diagnosis of chronic gastric ulcer are shown to be malignant at operation. Many cases of gastric cancer reveal a "precancerous" history which, at any stage prior to the terminal period of malignancy, satisfies the clinical symptom-complex of chronic gastric ulcer.

2. A study of this series has been made in the attempt to determine how often chronic ulcer preceded gastric cancer and how this change is manifested clinically.

In its clinical consideration, the sex ratio in gastric cancer is approximately that of chronic gastric ulcer (3.1 males to 1 female). More than three-fourths of the cases of gastric cancer occur in persons between the ages of 40 and 70 years; more than one-half those of chronic gastric ulcer (134 cases) between the ages of 40 and 70. A family history or one of blood-relationship of gastric cancer existed in 9.2 per cent, and a history of tuberculosis in 1.2 per cent.

Precancerous history indicates that 41.8 per cent of proved cases of gastric cancer presented early symptoms of chronic gastric ulcer; 18.7 per cent showed the early symptomatology of "irregular" gastric ulcer, and 32.1 per cent of the cases had the symptom-complex of gastric cancer, without previous gastric malfunction. Thus, in more than 60 per cent of the cases of gastric cancer the patients had previous dyspeptic history, and this history was generally that of chronic gastric ulcer.

The length of time of all symptoms of the "primary" cancerous group (182 cases) was 7.1 months. The average length of time of the precancerous dyspeptic period in 239 cases was 11.4 years. In this group the supervening period of evident malignancy averaged 6.1 months.

Development of precancerous history permits patients coming to laparotomy at a stage when, in more than one-half of the instances, surgical advantages of a localized process are available. In about one-fifth of the cases of "primary" gastric cancers, *ulcus carcinomatosum* is demonstrated operatively.

The significance of clinical symptoms and peri-

odicity was shown by the fact that in 81 per cent of the cases in which prolonged dyspepsia had preceded cancer, periodicity of symptoms was noted in that stage, while in 99 per cent of the cases periodicity was absent, when the process became evidently malignant. In but 4.8 per cent of 182 cases of "primary" cancer were there periodic attacks of distress.

As to types of pain, nearly one-fourth of the patients in whom dyspepsia preceded malignancy had prostrating pain, (colics, etc.), while only about one-fifteenth of the patients with "primary" cancer exhibited this type of distress. Opiate relief was required in 6.5 per cent of the former class and in 2 per cent of the latter. Food ease of pain was present in more than one-fifth of the cases in which malignancy followed clinical gastric ulcer and in 3.2 per cent of the "primary" cancer group.

Melæna or hæmatemesis was noted in 17.1 per cent of the cases. Of the group styled malignancy following ulcer, hæmorrhage occurred in 62.9 per cent; in the "irregular ulcer" group before malignancy, 19.5 per cent; and in "primary" cancer group, 16.5 per cent. Of patients bleeding within two years of coming under observation, more than three-fourths fell in the ulcer-before-cancer classification. The hæmoglobin estimation was rather higher in the primary cancer group than in the ulcer-preceding-malignancy class.

Vomiting was observed in more than 57 per cent of the cases of gastric cancer, while more than 40 per cent exhibited delayed vomiting. Of the entire group, 12 per cent gave a history of dark or coffee-ground vomit.

Nearly three-fourths of the cases of gastric cancer exhibited abdominal tumor or ridge. This was present in nearly two-fifths of the cases of "primary" cancer and in more than three-fifths of the cases in which ulcer preceded malignancy clinically.

In more than one-fifth of the cases in the "primary" cancer division and in about one-ninth of the cases in the non-primary group, metastases were demonstrated before laparotomy.

The test-meal findings showed that delayed gastric emptying power was evidenced in nearly two-thirds of the cases in the primary cancer class and in nearly three-fourths of the cases in the non-primary division.

In 55.4 per cent of primary gastric cancer cases free hydrochloric acid was absent; in 11.5 per cent it was between 20 and 50. In the non-primary cancer class, free hydrochloric acid was absent in 49 per cent and in 20 per cent it was between 20 and 50. Lactic acid was more commonly noted in the primary cancer group than in the non-primary division.

The presence of occult blood was rather more frequently demonstrated in the non-primary cancer class than in the primary cancer group; the presence of Oppler-Boas bacilli was demonstrated in 93.8 per cent of cases of gastric cancer by the differential agar-stain method.

The glycyltryptophan test was positive in 40 per cent of the 141 cases. The hæmolytic reaction was positive in 47.2 per cent of the 31 cases. The formaldehyde titration index was uniformly higher in gastric cancer and ulcera carcinomatosa than in other gastric ailments. The estimation of soluble albumin by the Wolff-Junghaus test was more uniformly positive in cancer and carcinomatous ulcer cases than other forms of gastric disturbance.

In about 10 per cent of the cases of gastric cancer the evidence returned by the fluoroscope and röntgenogram is of distinct value in making absolute diagnosis of physically inaccessible located cancers.

The surgical consideration is of importance, as the locations of ulcera carcinomatosa and cancer, as shown by laparotomy, closely approximate those of chronic gastric ulcer, but do not correspond to the post-mortem localization of gastric cancer. More than one-fifth of the cases of gastric cancer revealed no involvement of the lymph-nodes, with generally favorable operative outlook. In nearly 4 per cent of cases free abdominal fluid was present — these were inoperable cases.

More than 98 per cent of gastric cancers were adenocarcinomata, while sarcoma occurred but once in 566 cases. More than one-fourth of gastric cancers show ulcerative changes, as primary or secondary types of growth. It is usually an easy matter to state definitely whether or not a given specimen is, at the time, benign or malignant. There is a group of cases of chronic ulcer in which examination of fresh tissue reveals cellular or intracellular variations of such type as to warrant designation of "precancerous" ulcer. It is often impossible to distinguish stages of simple and malignant hyperplasia histologically. Benign ulcers of the duodenum may be associated with malignant gastric ulcers. Benign and malignant ulcers may be associated in the same stomach.

LEO G. DWAN.

Case, J. T.: X-Ray Aid in the Recognition of Pyloric and Duodenal Ulcer; a New Sign of Duodenal Ulcer. *J. Mich. St. M. Soc.*, 1913, xii, 577.
By Surg., Gynec. & Obst.

X-ray examination in gastro-enterology is essentially fluoroscopic, except for purposes of record, for comparison, or when gall-stones are suspected. After the regular bismuth meal, consisting of 10 ounces of farina mush containing 1 part in 8 of barium sulphate, the ingestion of the meal is watched in order to determine the following points: Emptying time, size, shape, position, character of peristalsis, spastic manifestations, identification of pain points, mobility of the stomach and duodenum, bismuth flecks, etc.

Though in many cases of duodenal ulcer the emptying time of the stomach is normal, a rapid emptying is suggestive of duodenal ulcer, while cases not showing this are those in which actual obstruction exists. Quick emptying is also seen in cholelithiasis, gastric ulcer with perforation and adhesions to the pancreas, in extensive gall-bladder

adhesions, and in early carcinoma of the pylorus. Early hypermotility with later delay may usually be considered indicative of tardy pylorospasm associated with delayed hypersecretion, and is suggestive of duodenal ulceration. Delayed motility with hypersecretion and early pylorospasm is suggestive of pyloric ulcer.

The stomach is hypertonic or orthotonic in duodenal ulcer, but usually hypotonic or atonic in pyloric ulcer. Marked delay in clearance associated with gastric dilatation is likely to depend upon a benign cicatricial obstruction.

A spastic indrawing high up on the greater curvature is described as a sign of duodenal ulcer, this being accompanied by pain or pressure over the duodenum. Not all duodenal ulcers show this indrawing and it has been observed in Graves' disease, appendicitis, and gall-stones. Subjective pain over the duodenal shadow is suggestive, but tenderness in that area usually indicates adhesions, though it may be due to other causes, such as cholecystitis. Peristaltic waves may be normal in duodenal ulcer, and in pyloric ulcer they are usually exaggerated in depth and often in number.

The duodenal bulb normally contains bismuth throughout the period of digestion, and when it persistently fails to fill, the indication is duodenal ulcer or periduodenitis with adhesions. Unusual filling of the entire duodenum is frequently seen in duodenal irritation from ulcer, gall-stones, or periduodenitis, and is indicative of a patent pylorus rather than reduced duodenal motility. A fleck rarely persists in the crater of an old duodenal ulcer. The author has been able to demonstrate gall-stones in 40 per cent of cases, and concludes that the X-ray examination may be of great value, when studied in connection with other clinical data, in the differentiation of pyloric, duodenal, and gall-bladder lesions.

E. K. ARMSTRONG.

Melchior, E.: Statistics of Peptic Ulcer of the Duodenum (Zur Statistik des peptischen Duodenalgeschwürs). *Med. Klin.*, Berl., 1913, ix, 1408.
By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

These statistics are the result of a series of questions addressed to a number of physicians and a brief report of the answers received. Among 716 cases, 81.3 per cent were in men and 18.7 per cent in women. They were much more frequent in young adult life — 40.7 per cent were uncomplicated ulcers. The complications in 425 cases consisted of stenosis, 182; perforation into the abdominal cavity, 178, with 50 per cent mortality in acute perforation; acute hæmorrhage, 45; carcinomatous ulcer, 7; subphrenic abscess, 5; subhepatic abscess, 3; liver abscess, 1; callous tumor, 1; external fistula, 1; diverticulum, 1; perforation of the liver, 1.

Pain when the stomach is empty is not a characteristic symptom of duodenal ulcer. Blood cannot always be demonstrated in the stools, even in florid ulcer. In several cases, during the operation, the ulcer could not be felt from outside through the

intestinal wall, and even internal palpation was without result in some cases. In treatment, gastro-enterostomy with occlusion of the pylorus by Kelling's method, or more rarely by ligation, was preferred to Von Eiselsberg's excision, which presents great technical difficulties. Many cases in the material show that simple gastro-enterostomy in cases of ulcer that have not led to stenosis is not sufficient. There was recurrence of hæmorrhage, perforation of the ulcer, and florid ulcer, after three years. The material is too uneven and too recent to be used as a basis of judgment as to permanent results.

BLEZINGER.

Kanavel, A. B.: The Duodenum: Mobilization, Traumatic Rupture, and Toxæmia. *Tr. Western Surg. Ass., St. Louis, 1913, Dec.*

By Surg., Gynec. & Obst.

This contribution dealt with three questions: First, the possibility of mobilizing the duodenum; second, a consideration of traumatic rupture, its diagnosis and treatment; third, the question of toxæmia developing in those cases in which the duodenum has been ruptured. Attention was called to the difficulty of reaching the third and lower portion of the duodenum by Kocher's method of mobilization, and it was suggested that the following procedure should be used.

In the first of two cases going to operation, the author experienced great difficulty in mobilizing by Kocher's method; and in the second case of extraperitoneal rupture of the duodenum, he raised the colon and made an incision in the peritoneum between the duodenum and the hepatic flexure of the colon, i.e., in the peritoneal covering of the colonic mesentery. The opening was enlarged by the fingers and the entire retroperitoneal duodenum in its lower part was completely exposed, thus allowing of suture and treatment.

The cases of extraperitoneal rupture which the author reports (both cases were fatal) presented marked toxæmia, and death was apparently due to this toxæmia rather than to peritonitis, the absence of which was demonstrated by post-mortems.

The question as to whether the toxæmia was due to a secretion of the duodenum or to some other factor was discussed.

Pantzer, H. O.: Fibroma of the Intestine, Eventuating in Intussusception and Obstruction. *Am. J. Obst., N. Y., 1913, Lix, No. 5.*

By Surg., Gynec. & Obst.

The patient, a girl of 15 years, for three months had abdominal distress, which on three occasions had been rather severe and had finally presented symptoms of bowel obstruction. Operation revealed an intussusception about 10 inches in length in the ileum, 10 inches from the cæcum. When the bowel was reduced, the cause of the trouble was found to be a fibroma of the bowel wall, the sessile attachment of which was marked by a white indurated depressed spot the size of a nickel.

Three inches of the affected gut were resected and an end-to-end anastomosis was done. The tumor was $1\frac{1}{2}$ by $2\frac{1}{4}$ inches in size. The recovery was uneventful.

N. SPROAT HEANEY.

Venot, H., and Parcelier, A.: Primary Carcinoma of the Small Intestine (*Le carcinome primitif du jéjuno-iléon*). *Rev. de chir.*, 1913, xlvii, 687.

By Journal de Chirurgie.

Confusion in diagnosing tuberculosis is easy and so frequent that a diagnosis of cancer ought not to be accepted unless verified histologically. This localization of cancer is rare and Venot and Parcelier have only found 47 authentic cases. It occurs frequently in men of from 40 to 60 years of age and it is usually in the lower or upper third.

It is generally ring-shaped, forming a ligature which constricts the intestine till it is impermeable, sometimes even to liquids. The intestine is hypertrophied, dilated, œdematous; there is an inflammatory pseudohypertrophy. The mesentery is thick, infiltrated, and sometimes nodular, from increase in size of the glands. Adhesions are frequent, invagination exceptional, and perforation rare.

There are glandular metastases in 40 per cent of the cases, and often metastases in the peritoneum or viscera—liver, ovary, bones, kidneys, and rectum.

The diffuse form is characterized by the presence of multiple foci, which develop in rare cases by autotransplantation, or by metastases through the lymphatics, or by simultaneous evolution.

There are exceptional cylindrical aneurismal forms, not causing stenosis, which resemble sarcoma.

They are generally adenocarcinoma, rarely scirrhous, diffuse epithelioma, or colloid cancer.

A rare form is described under the name of carcinoid tumor of the small intestine. It has been found only at autopsy, and is in the form of separate nodules, opaque, white, and hard, and occupying the free border of the intestine. Some say that the origin of these tumors is in aberrant pancreatic nodules; others, in the débris of the omphalo-mesenteric duct; others, in the glands of Lieberkühn.

Clinically the onset is gradual, characterized by a continuous pain at the seat of the tumor, or by colic, which indicates the beginning of stenosis.

Vomiting is frequent, as are also disturbances in the intestinal circulation. At the same time the general health declines and emaciation follows rapidly. The tumor cannot always be felt on palpation, and it is in such cases that examination of the fæces and röntgen examination are valuable.

Intestinal occlusion is the most important of the complications, and it occurs in 40 per cent of the cases. Diagnosis can be made when there are functional and physical signs of stenosis of the small intestine, accompanied by early and pronounced changes in the general health. However, differentiation from tumor of the stomach is not always easy, but examination of the stomach contents will usually settle the question. Confusion with tumor of the large intestine is more frequent.

But even in exploratory operation the gross appearance of cancer of the small intestine is not absolutely characteristic and is often confused with tuberculosis producing stenosis.

Prognosis is grave, for it always leads sooner or later to occlusion; in the forms with multiple foci it is even more grave.

The treatment may be radical or palliative. Of 36 cases reported by the authors, 26 had resection performed; of these, 16 recovered and 10 died, a mortality of 38.4 per cent. But ten of these were operated on after occlusion had taken place, with seven deaths, or 70 per cent mortality. Of the 16 operated on before occlusion there were thirteen recoveries and three deaths, or 18.7 per cent mortality.

Palliative operations show a mortality of 60 per cent, these figures being explained by the advanced stage of the disease when operation was performed. Artificial anus of the small intestine is so inconvenient and so grave that it is better to try entero-anastomosis at a distance from the cancer.

Lengthy survivals are not rare; Kummer reports a case free from recurrence after 7 years and 7 months, and Mikulicz, one after 7 years and 5 months. J. OKINCZYC.

Guibe, M.: Relations Between Appendicitis and Diverticulitis (Sur les rapports entre l'appendicite et la diverticulite). *Presse méd.*, 1913, xxi, 713.
By Journal de Chirurgie.

Simultaneous lesions of the appendix and a Meckel's diverticulum are probably quite frequent. They may be simply a coincidence, or the one may be caused by the other; in the latter case, it is generally the appendicitis that is primary and causes the diverticulitis.

A case is described of a young man of 17 who was operated on for a gangrenous appendix containing a fecal calculus. On operation there was found to be a free Meckel's diverticulum, at least 6 or 8 cm. long, with a lumen about equal to that of the small intestine in which it was inserted. As the wound was infected it was decided not to remove the diverticulum. Drainage was inserted and the recovery was unaccompanied by complications.

Three and a half months later the patient returned to the hospital, and on the day of his admission was seized with violent colic and vomiting, for which a second operation was performed. With some difficulty the diverticulum was found. It was so adherent to the cæcum that it could not be freed without tearing the wall of the cæcum. The diverticulum was ligated and removed, and the wall of the cæcum restored. Drainage was inserted, followed by recovery.

On histological examination the mucous membrane was found to be normal, with no trace of inflammation. The subserous coat, however, showed marked thickening. It was as thick as all the coats together would normally be, and was extremely vascular. It was made up almost entirely of connective tissue, presenting, especially deep down

near the muscular coat, a fibrous structure with wavy bands of connective tissue; more superficially, it was formed of elongated, fusiform fibroplastic cells. There was no sign anywhere of inflammatory nodules or of collections of leucocytes.

It was an inflammatory process which had terminated and the lesions were becoming organized; moreover, the process had extended from without inward, progressing from the serous toward the mucous coat, and almost entirely limited to the serous and subserous layers. J. DUMONT.

Basham, D. W.: Retrocæcal Appendicitis. *Tr. Western Surg. Ass.*, St. Louis, 1913, Dec.
By Surg., Gynec. & Obst.

The author recognized three forms of the disease based upon the anatomical situation of the appendix. He thinks that the location of the vermiform process has much to do with the character of the individual case, the limitations of the abscess, in the event of suppuration, being determined by the surrounding structures.

The three most frequent abnormal situations in which the appendix is found are: (1) Posterior and external to the cæcum, with the distal end of the appendix directed upward and within the peritoneum; (2) posterior and external to the cæcum and without the peritoneal cavity; and (3) directly behind the cæcum, often just behind the valve of Bauhin.

He lays stress upon the frequency of obstruction of the bowels as a complication of appendicitis when the organ is situated just back of the ileocæcal region. The author calls attention to the obstacles to a clear diagnosis in these unusual forms of appendicitis. Special mention is made of the ease with which certain cases may be mistaken for some obscure renal affection or disease of the gall-bladder; and reference is made to the unusual location of the tumefaction. Attention is also called to the absence of dullness on percussion and the presence of resonance when the appendix occupies a position directly posterior to the cæcum.

Reference is made to the presence of albumin and blood in the urine, with frequent micturition, when the inflamed appendix lies in close proximity to the ureter as it crosses the psoas muscle. The absence of rigidity in the muscles of the anterior walls of the abdomen is attributed to the fact that the posterior peritoneum, instead of the anterior, is involved in the inflammatory process. The pain, which is often felt with greatest intensity in the lumbar region and over the upper and outer part of the thigh, is explained by the fact that the nerves supplying these parts are pressed upon in their course outward across the psoas muscle beneath the inflammatory mass.

The author believes that suppuration is more frequent in these abnormally situated appendices than in appendices hanging from the caput cæci free in the peritoneal cavity. In the operation for post-cæcal appendicitis, the author insists upon

removal of the appendix, perfect toilet of the abscess cavity, and posterior drainage.

Kostanecki, K.: Comparative Morphology of the Cæcum, with Special Reference to Its Relation to the Peritoneum (Zur vergleichenden Morphologie des Blinddarmes unter Berücksichtigung seines Verhältnisses zum Bauchfell). *Anat. Hefte*, 1913, xlviii, 309.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Kostanecki follows the gradual development of the cæcum in the animal kingdom with the aim of explaining its relation in man and the other mammals. He lays special stress on the relation of the cæcum to the peritoneum and the blood supply. Differences in the findings of different investigators are explained by individual differences, differences in age, and especially by difference in the degree to which the cæcum was filled and by the degree of contraction of the muscles. He finds in fish (Selachii, with finger-shaped glands, and in some Teleostei), as well as in amphibia, that the cæcum is a projection of the dorsal wall of the beginning of the terminal intestine in the dorsal layer of the mesentery, directed toward the head; that is, that they have a dorsal cæcum.

Since the cæcum has developed within the layer of the mesentery and is covered smoothly and uniformly by both layers of the peritoneum, special peritoneal folds are not visible; between these layers, branches from the superior mesenteric artery supply it, and veins pass from it to the first part of the portal vein. In reptiles and birds there are transition forms between the above form and the mammalian.

The findings in reptiles must be regarded as variations on the way to the final form. The cæcum in reptiles within the same orders and families shows great variations in situation, degree of development, and form. It may be entirely lacking in some; in some it resembles the decided dorsal cæcum of the amphibia; in the majority of reptiles, especially where they are of large size, it is asymmetrical, being more strongly developed either toward the left or the right. This lateral displacement, the formation of a lateral cæcum, is the most striking characteristic in the reptilian group. The lateral cæcum, too, either remains intermesenteric throughout its whole extent, and only pushes the left or right peritoneal layer of the dorsal mesentery before it, or at least it is intermesenteric at its point of juncture to the large intestine and only its apex is free from the layer of mesentery.

In some groups of the reptilia there is a decided boundary between the lumen of the cæcum and that of the large intestine. Moreover, it is suspected from the macroscopical appearance that there is a histological difference between the mucous membrane of the cæcum and that of the large intestine. Both these facts indicate a specific independent function of the cæcum.

In the birds the form of the cæcum shows great

variations; as a rule, birds have a pair of cæcums of very large size. The cæcum of cryptoprocta ferox is given as a type of the mammalian cæcum, especially on account of the formation of its mesenteric folds. The mammalian cæcum is a ventral cæcum that is connected with the remaining intestine and the mesentery by three typical peritoneal folds, viz.: (1) The ileocæcal vinculum, analogous to the plica ileocæcalis, which connects the dorsal midline of the cæcum with the ventral side of the ileum, and (2) and (3) the right and left vascular mesentericocæcal folds, one on each side of the vinculum.

ZUR VERTH.

Eisendrath, D. N., and Schnoor, E. W.: The Significance of the Jackson Veil. *Tr. Western Surg. Ass.*, St. Louis, 1913, Dec.

By Surg., Gynec. & Obst.

From observations during operations, from dissection of cadavers, and finally from examination of ten fœtuses, the authors believe that the following conclusions may be drawn.

The parietocolic fold of Jonnesco, synonymous with the pericolic membrane or Jackson veil, is a reduplication or fold of peritoneum which is constantly found during fœtal or post-natal life. This membrane corresponds in every way to the description of Jackson's specimens given by Hale in his two principal papers, published in 1908 and 1913, respectively. It is a fine translucent membrane which varies greatly in vascularity.

In some of the author's cases there were only a few fine capillaries, while in others the membrane was extremely vascular. The upper border of this right-sided pericolic membrane is almost invariably at the level of the hepatic flexure, and its lower border from one to one and one-half inches above the lower end of the cæcum. In some of the cases the lower border either extended a little farther down and covered the entire cæcum and a portion of appendix, or fused with the fold of Treves. In the great majority of cases this fusion did not occur.

The vessels of the pericolic membrane are, as a rule, directed downward and inward. In two of the authors' cases the membrane was as thick as ordinary cardboard and showed practically no vessels; in the remainder of the patients the membrane was very thin. The membrane extended inward across the front of the colon to the attachment of the mesocolon, and either fused with the peritoneum, covering the latter, or fused with the omentum along the upper third of the ascending colon. These cases may be called normal. The membrane, being a persistence of a fœtal structure, should, under no circumstance, be stripped off, as such a step would result in leaving an extensive denuded surface.

From the examination of specimens and from observation in the living cases, the authors believe that the genito-mesenteric fold of Reid is the forerunner of the ileopelvic band of Lane and bears the same potential relation to the Lane kink that the pericolic membrane bears to possible kinks of the

ascending colon — that such constrictions occur can no longer be doubted. One case reported affords ample proof of the rôle which the Jackson veil may play in the production of acute and chronic obstruction of the ascending colon and cæcum, but, at the present time, it is not clear to the authors what causes this change in the pericolic membrane from an innocent persistent foetal structure to the production of a distinct pathological entity. In their opinion, Jackson, Pilcher, Gerster, Flint, and others have rendered a great service in calling attention to the various sequelæ of such pathological changes in the pericolic membrane.

In conclusion, the authors believe that one of the chief objects of the investigation has been fulfilled by calling attention to the fact that there are two distinct types of pericolic membrane, viz.: (1) Those which are innocent, and (2) those which may cause mechanical interference with the function of the colon. Each case must be judged upon the operative findings, and there is no justification in saying that every pericolic membrane requires interference — the majority are perfectly normal structures. Their examination of foetal cadavers confirms those of Gray and Anderson — that there is a left parietocolic fold, corresponding in every detail to the same structure on the right side. It is a constant finding in the foetus, and no doubt search for it in the future, during operations on the left side of the abdomen, will confirm these foetal observations.

The treatment of the pathological conditions due to the right pericolic membrane must depend on the findings in the individual case.

Lane, W. A.: Chronic Intestinal Stasis. *Brit. M. J.*, 1913, ii, 1125. By Surg., Gynec. & Obst.

In the original article, Lane describes very briefly the different situations where intestinal "kinks" occur. He states that the kink at the ileo-cæcal region frequently causes appendicitis. The drag by the kink upon the duodenojejunal juncture causes a patency and stagnation in the duodenum tending to regurgitation in the stomach. A chronic pyloric spasm causes a dilatation of the stomach. The same stagnation may lead to inflammation of the gall-bladder and ducts or to a pancreatitis. The kink at the sigmoid area leads to stagnation in the colon and secondary stagnation in the small intestines. The author gives the impression that many of the human ills can be, in one way or another, ascribed to intestinal stasis, e.g., Bright's disease, Raynaud's disease, cardiospasm, ulcer of the stomach and duodenum, degeneration of the heart, pancreatitis, prolapse of organs, bends in the uterus, tuberculous infections when not produced by direct inoculation, rheumatoid arthritis, and changes in the thyroid gland, whether as adenomatous tumors, general enlargement of the thyroid, or exophthalmic goiter, etc.

When the patient is under treatment he advises, first, the use of paraffin daily to act as a lubricant, producing one or more liquid movements a day.

This failing, operative measures are undertaken: Resection of the large bowel with an ileocolostomy if easy; otherwise, merely an ileocolostomy. He never performs gastro-enterostomy for duodenal distention even if there be duodenal ulceration. If cicatrization has produced a narrowing, a gastro-enterostomy is performed. In ulceration of the stomach with no suspicion of cancerous infection, in addition to a short-circuit with or without colectomy, he does a gastro-enterostomy to take the strain off the lesser curvature by draining the stomach. He states that the only risk presented by the operation of short-circuiting and colectomy is that of adhesions of the intestines to one another or to the abdominal wall in such a manner as to produce a varying degree of obstruction.

M. S. HENDERSON.

Vignolo, G.: Mobilization of the Intestine by Section of the Pelvic Mesocolon, to Re-establish Direct Continuity of the Intestine, in a Case of Resection of the Sigmoid Flexure and a Part of the Descending Colon (*Mobilisation basale du mesocolon pelvien pour rétablir la continuité directe de l'intestin dans les résections du colon iliaque et de la portion terminale du colon descendant*). *Riforma méd.*, 1913, xxix, 899.

By Journal de Chirurgie.

Vignolo reports the case of a man of 49 who was operated on for an ulcerated cancer of the sigmoid.

The first stage of the operation was the making of a cæcal anus. The second was undertaken six weeks later, and laparotomy showed that the neoplasm involved a part of the descending colon and almost all of the sigmoid flexure; the segment involved, though adherent to the iliac ossa, was easily dissected and removed, but on attempting to approximate the two ends they were found to be 10 cm. apart. The superior segment was 3 cm. above the crest of the ilium, while the lower one rested in the iliac fossa, directed downward. An end-to-end anastomosis was impossible; the end of the pelvic loop could not even be drawn up far enough to permit of a termino-lateral anastomosis. But it seemed possible to accomplish this by incising the base of the pelvic mesocolon; this incision was carried to the sacral promontory, and allowed the two segments to be brought together in a side-to-end anastomosis. After tamponing, a partial suture of the upper part of the laparotomy wound was done. Thirty days after the operation, the cæcal anus was closed under local anæsthesia; 45 days afterward, the patient had completely recovered.

The segment of colon removed was 20 cm. long and 6 to 7 cm. broad at its widest part. Its wall was more than 2 cm. thick, the average diameter of the lumen about 1½ cm. The mucous membrane was deeply ulcerated above as well as at the level of the stenosis. Histologically, it was found to be an infiltrating adenocarcinoma of the intestinal wall. The author seems to want to make his operation a general surgical procedure for the approximation of two segments of intestine where one is fixed and the other movable on a mesentery. AMEUILLE.

Duval, P.: Indications for Intra- and Extra-Abdominal Colectomy in Cancer of the Colon (Sur les indications respectives de la colectomie intra-abdominale et des colectomies extra-abdominales dans les cancers des colons). *Bull. et mém. Soc. de chir. de Par.*, 1913, xxxix, 1070. By Journal de Chirurgie.

In the treatment of cancer of the colon there are three methods in use: (1) Intra-abdominal colectomy with immediate suture of the colon, called colectomy in one stage; (2) removal of the coil of colon from the abdominal cavity with or without the formation of a temporary anus in situ, with extra-abdominal colectomy afterwards, called colectomy in two stages; (3) colectomy with immediate formation of an anus in situ. Colectomy in three stages is really an intra-abdominal colectomy preceded by the construction of an artificial anus above the seat of disease.

These three methods have been considered rivals and each has had its ardent adherents, but Duval believes each has its special indications.

In the first place the question is unanimously agreed on as far as the cæcum, the ascending colon, and even the hepatic flexure are concerned. Resection of the cæcum and the ascending colon is always carried out at one operation. All are agreed on one other condition, namely, where there is acute obstruction. All authorities agree in making a fistula of the cæcum in these cases, and delaying laparotomy until the acute symptoms have passed.

The discussion is therefore limited to cases of cancer of the transverse colon and of the left colon, not complicated by acute obstruction. In these cases the indications depend on: (1) The clinical conditions; (2) the pathological condition of the colon; and (3) the seat of the lesion.

1. Obesity, heart disease, kidney disease, or chronic intoxication absolutely contra-indicate operation in one stage.

2. When the upper end of the colon is dilated, and especially when it is rigid, immediate suture is not indicated unless the two ends are practically equal in size, and unless the walls of the upper end are pliable enough to permit of perfect approximation and suture. Moreover, colectomy in one stage, to be safe, should be preceded by the establishment of an artificial anus which will allow the colon to be emptied and disinfected.

3. The last point to be considered is the site of the lesion. Some say colectomy in several stages should be done on fixed colons, and in one stage on mobile colons. But by performing colo-parietal dissection one can immobilize the colon, except, perhaps, the splenic flexure, so this destruction would seem to hold good only in cases in that region.

J. DUMONT.

Jones, D. F.: Carcinoma of the Rectum. *Boston M. & S. J.*, 1913, clxix, 707.

By Surg., Gynec. & Obst.

Statistics are presented by the author to show that the present treatment of carcinoma of the

rectum is very unsatisfactory. The average number living three years after treatment is only 16 per cent. Furthermore, from 25 to 50 per cent of the cases which present themselves to the surgeon are already in an inoperable condition. The author concludes, therefore, that from 4 to 8 per cent of the cases which present themselves to the surgeon are alive three years after operation. In order to improve these results the author makes an appeal for two things: (1) An earlier diagnosis, and (2) a more complete removal of the carcinomatous tissue.

The diagnosis of carcinoma is rarely made early, and oftentimes a probable diagnosis of hæmorrhoids is made. In fact, in 10 per cent of the cases which present themselves at the Mayo Clinic, there has been a previous operation for hæmorrhoids. It may well be presumed that a much larger percentage of cases had been treated in some way for hæmorrhoids. Many of these cases could, in all probability, have been diagnosed much sooner by a careful rectal examination.

The operation which is suggested is a very extensive dissection by both the abdominal and sacral route. It depends for its rationale upon the recent study of the lymphatics of the rectal region. The main lymphatics follow the general course of the three systems of blood-vessels, namely the superior, middle, and inferior hæmorrhoidal vessels. In addition, there are lymphatics extending from the posterior portion of the pararectal plexus and from the insertion of the levator ani muscles; these glands empty into the lateral sacral glands and the glands above the promontory.

The technique of the operation is carried out in two stages. In the first stage, a median abdominal incision is made, the sigmoid is sectioned, the incision being carried down through the mesentery to the inferior mesenteric artery, which is tied by two ligatures and cut. The lower sigmoid and rectum are then dissected from the sacrum, the peritoneal leaves dissected from the sides of the rectum, leaving all fat attached to the rectum. The ureters are found and isolated, after which all fat and glands in the pelvis are separated from the pelvic walls and vessels by blunt dissection. The rectum is then separated from the bladder, after which the distal end of the sigmoid is dropped into the pelvis and the peritoneal flaps brought together over it. The proximal end is brought out through the wound and attached there for a permanent colostomy.

The second step of the operation is, in most cases, carried out by the author immediately. The anus is closed by a suture or ligature, an incision made about it, and the dissection carried up to meet that made in the abdomen. The whole mass is then brought out through the perineal wound.

In some of the author's cases he has allowed several days to elapse between the two steps. Spinal anaesthesia is then used for the second stage. The sigmoid, which has not been cut at the first operation, is sectioned, the proximal end being inverted and left as an appendage to the colostomy. The

remainder of the operation is practically the same as when both stages are carried out at the same operation.

J. H. SKILES.

Depage and Mayer: The Surgical Treatment of Cancer of the Rectum (*Traitement chirurgical du cancer du rectum*). *Arch. prov. de Chir.*, 1913, xxii, 332. By *Journal de Chirurgie*.

This report to the Belgian Society of Surgery is a general review in which the authors describe their own method of procedure. They lay great stress on the preparation for operation. They do not believe in the routine formation of an iliac anus; they use it only in cases of obstruction or in cases in which the cancers are inoperable because they are immobilized by inflammatory infiltration around them.

They purge their patients several times before the operation and empty the intestine by two or three enemas the evening before and the morning of the operation. For several days they give 1.5 gms. of salol per day.

Except in the abdomino-perineal operation the patient is placed in the ventral position, which exposes the operative field to good light and also decreases hæmorrhage.

In case of cancer of the lower part of the rectum, the authors practice amputation by the perineal route, which is followed by incontinence; while for tumors of the middle portion of the rectum and also for the upper part of the ampulla, they use the sacral route. Their technique is as follows:

With the patient in the ventral position, a median cutaneous incision is made, passing from the middle of the sacrum to three or four centimeters above the anus, followed by liberation and resection of the coccyx. The rectum, circularly detached from the neighboring organs below the tumor, is then tied with strong silk and cut below the ligature. A supplementary suture of strong silk hermetically closes the upper segment, which is detached from the sacrum and its lateral and anterior insertions and brought down. The peritoneal cul-de-sac, which is open during these maneuvers is carefully sutured when the organ is brought down far enough. The diseased portion of the rectum being resected, the two ends are united by invagination, the proximal end being drawn through the anal portion and fixed at several points to the skin. If the tumor is near the sphincter the mucous membrane is removed from all the lower part, and the upper end invaginated through the denuded sphincter. The breach is left open with a Mikulicz tampon. In cases where rectosigmoid cancers have invaded the entire rectum, the abdomino-perineal route may be used.

Goepel has recommended the high peritonization of the abdomen, incising the wall transversely above the pubis, detaching the parietal peritoneum from the upper edge, and fixing it by a few sutures to the posterior pelvic peritoneum; thus the greater peritoneal cavity is excluded from the field of operation. In April, 1912, he had practiced 21 amputations of the rectum by this method, with only 3

deaths, though all other statistics of abdomino-perineal amputation give 25 to 45 per cent mortality.

The after-treatment is very important. There should be an abundant dressing of gauze and cotton, which should be renewed as soon as it becomes soiled. During the first few days there should be a tolerably strong pressure on the wound. The patient is kept constipated for 7 or 8 days with 3 pellets of 2 centigrams each a day.

The tampon is removed at the end of 48 hours and a daily irrigation of dilute oxygenated water or potassium permanganate. The cicatrization of the wound, which requires from 6 to 20 weeks, demands great watchfulness, especially when, as frequently happens, a fistula is established in the lower portion of the invaginated segment. It is well, when the patient can stand it, to put a large drain through the anus into the superior segment. If recurrence does not take place within 6 years, permanent recovery is assured.

GEORGES LABEY.

Hayes, M. R. J.: X-Ray in the Diagnosis of Abnormalities in the Intestinal Tract. *Med. Press & Circ.*, 1913, xcvi, 342.

By Surg., Gynec. & Obst.

The author opens his subject with a quotation from a former paper entitled "X-Rays in the Diagnosis of Urinary Calculi," which is worthy of repetition. It follows:

"Radiology should be employed as an aid to, and not a substitute for, the ordinary methods of diagnosis. The X-ray has proved to be such a 'short cut' in the diagnosis of so many conditions, and it has relieved us so much of the necessity of making a careful analytical study of symptoms and signs, that we are becoming more and more inclined to resort to it to the exclusion of other trustworthy methods of clinical investigation."

The cervical portion of the œsophagus is best seen in the right or left lateral position; the thoracic, in the right anterior or left posterior oblique. To visualize the shadow, bismuth carbonate is given in cachets of ten to fifteen grains each, or mixed in the proportions of two to four ounces to the pint of sago and milk, arrowroot, or bread crumbs. The author reports two interesting cases of complete obstruction of the œsophagus caused by the filling of diverticuli with food.

On fluoroscopic examination the pouches could be seen, in each case, to fill; distention caused discomfort; pressure on the left side of the neck caused the ejection of the contents into the mouth, or inclining the head and neck forward and to the right permitted portions of the bismuth to pass into the stomach. One patient radiographed four days after the examination showed the pouch still full of bismuth.

The author contrasts the X-ray picture of spasmodic, cicatricial, and malignant stricture. Spasmodic stricture usually occurs at the cardia; the bismuth bolus appears in an elongated oval mass with rounded head and tapering tail; it accumulates

above the obstruction; peristaltic activity increases; regurgitation, but seldom vomiting, may occur; the spasm suddenly relaxes and the food enters the stomach with a rush.

Cicatricial contraction occurs usually above the diaphragm; the food trickles through in a narrow stream; peristaltic activity becomes violent; regurgitation may occur, but the food never enters the stomach with a rush. Malignant stricture occurs frequently in men; it is located at the cardia or the level of the bifurcation of the trachea; the food passes normally to the obstruction, or into a dilated pouch above it, if closure is not complete, in a thin stream through it; peristaltic activity is weak or absent, or reverse in action with ejection of food; glandular shadows may be present.

He next describes the normal stomach in the erect and horizontal positions. In the erect, the upper two-thirds of the lesser curvature is vertical and one and one-half inches to the left of the vertebral column; the lower one-third curves abruptly toward the median line in the region of the umbilicus, the pylorus being seen two inches above and to the right. The greater curvature extends to a line drawn transversely between the summits of the iliac crests. In the horizontal position, the cardiac portion is broad and the pyloric correspondingly narrow, the greater curvature being two to three inches above the umbilicus. The author mentions Holzkecht's four types of normal stomach, the hypertonic, orthotonic, hypotonic, and atonic, remarking that the hypertonic form is very rare.

The author next discusses gastropsis, ulcers benign and malignant, and hour-glass stomach. The degree of ptosis can be estimated by measuring the distance of the greater curvature above a line drawn transversely between the summits of the iliac crests. The dropped stomach is vertical in position, dilated, and hypotonic, the cardiac end being elongated and tubular. If the pylorus is not displaced the descent appears to be due to loss of muscular tone in both the stomach and abdominal wall. The greater curvature may descend to the symphysis pubis without symptoms. The weight of the bismuth meal does not cause descent of the stomach. Changes in shape due to indiscretions in diet, overloading, atonic abdominal muscles, repeated pregnancies, and tight lacing cause no symptoms.

Associated with ulcers of the stomach is often a spasm of the muscle which produces an hour-glass-like appearance and interferes with normal peristaltic movements. The author has not found that the point of maximum tenderness on palpation indicates the site of the ulcer, and he considers this sign misleading.

The true hour-glass stomach must be differentiated from the above and from the spasmodic contraction of the "mid-gastric sphincter," which relaxes after some minutes or disappears when the stomach is massaged.

The characteristic shadow of the true hour-glass stomach is that of an inverted cone-shaped cardiac

portion, a more or less narrowly constructed portion with jagged margins, and a pyloric portion, increasing in size with the passage of the bismuth.

In conjunction with the duodenum, the author mentions especially a duodenojejunal kink caused by the sudden descent of the jejunum, resulting in dilation of the duodenum with violent peristaltic activity.

He mentions the possibility of demonstrating obstructive lesions, adhesions, and kinks in the ileum and colon by continuous observations during the passage of the bismuth through these organs. He gives the normal time for the passage of the bismuth meal at the various points as follows:

1. Pylorus, in from five to ten minutes.
2. Stomach empty, in from four to six hours.
3. Enters cæcum, in from three and one-half to four hours.
4. Ileum empty, in seven hours.
5. Ascending colon, full in six hours.
6. Splenic flexure, reached in eight or nine hours.
7. Rectum filling, in twenty to twenty-four hours.

No purgatives should be given on the days immediately preceding the examination, nor should constipation be present.

Temoin and Baur, J.: A Case of Human Distomatiasis (Un cas de distomatose humaine observé en Berry). *Arch. prov. de Chir.*, 1913, xxii, 381.

By Journal de Chirurgie.

A woman of 40 had been treated since 1908 for symptoms of hepatic colic without jaundice. She had a second attack in September, 1909, and a third in November of the same year. After that time there was a decline in her general health and she became much emaciated and sometimes had attacks of vomiting, melæna, and epigastric pain. In May, 1911, a tumor appeared, which was hard and painful on pressure, and seemed to be located in the greater curvature of the stomach.

In June, 1911, a diagnosis of gastric tumor was made. The tumor seemed to be adherent to the wall at the level of the greater curvature; but it appeared to be limited and about the size of a large nut.

Upon operation, in June, 1911, the tumor was found to be adherent to the stomach, which, however, was not involved and the adhesions were easily freed. The tumor with the part of the wall adherent to it was removed, after which the patient rapidly recovered health and weight.

Histological examination of the specimen showed that it was made up of fatty omental tissue, the meshes of which were filled with an infiltration of leucocytes, markedly eosinophilic. In the center of this infiltrated area careful examination showed distoma hepaticum.

Examination of the blood, June 29th, showed eosinophilia, which had disappeared by July 8th. In the fæces examined June 29th there were found neither ova nor parasites.

It is almost certain that the liver disturbance in

the past had been due to distoma, and that this focus, localized in the omentum through the blood stream, had made the diagnosis possible.

Study in the countries where distomiasis is common shows that there is no very characteristic symptomatology for human distomiasis, and it is confused with ordinary affections of the liver. However, diagnosis is possible in countries where animal distomiasis is prevalent by making a study of the leucocytes and complement deviation and examining the fæces for adult parasites or ova.

GEORGES LABEY.

LIVER, PANCREAS, AND SPLEEN

Debrez, L.: Pathogenesis and Treatment of Lithiasis of the Gall-Passages (Le traitement et la pathogénie de la lithiase biliaire). *Arch. gén. de Chir.*, 1913, No. 8, 914. By *Journal de Chirurgie*.

Debrez has made a histological and therapeutic study of 58 cases from Winiwarter's Clinic. He divides them into two classes, according to age: those below and those above 32 years of age. In young subjects acute inflammatory symptoms predominate, and often there is impaction of the calculus in the common duct.

The gastric pain, so often complained of, he thinks is due to the location of the stone in the neck of the gall-bladder. It can be reproduced by forcibly injecting liquid through a fistula in the bladder.

He believes that in cholecystitis as well as in appendicitis one attack is an indication for operation; no time should be wasted by waiting till graver symptoms appear. The indications for cholecystectomy and cholecystostomy have been discussed so often that it would hardly be worth while going into this part of the work but for the fact that in Winiwarter's Clinic cholecystectomy is rather the exceptional operation. He preserves the gall-bladder only when he fears that otherwise he would have to resort to complicated and dangerous procedures to restore the course of the bile. He advises a careful exploration of the neck of the bladder and the cystic and common ducts, for he thinks the recurrences after cholecystostomy are not due to the operation itself, but to the fact that the biliary passages were not carefully examined.

The second and longer part of the work is devoted to the pathogenesis of cholelithiasis. He does not settle the question, but makes an interesting contribution to it based on experimental work and laboratory examinations. He recalls the theories of the septic and aseptic origin of lithiasis, and the old theory of Maunayn, recently taken up by Chauffard. He discusses Riedel's dualist theory, which Aschoff and Bacmeister defended in 1909. These authors believe that there is a clear distinction between the radiate calculi, made up of pure cholesterol, which originate solely from stasis of bile in an aseptic bladder, and the other forms of calculi which originate only in an infected bladder.

Debrez has studied the two factors of stasis and infection and concludes that there probably is no difference in the origin of the cholesterol calculi, for only the covering is of pure cholesterol, formed around a mixed center of the same composition as the mixed calculi. Cholesterol crystals arise in the bladder only when it is sterile, the exception being one case where it was infected with typhoid bacilli. During a septic period the crystals become coated with biliary pigments.

E. DESMAREST.

Mayo, C. H.: Cholecystitis; and the Factors That Control Results of Operation. *Tr. Western Surg. Ass.*, St. Louis, 1913, Dec.

By Surg., Gynec. & Obst.

Mayo notes that the results of operation for cholecystitis are influenced by many conditions besides those in the gall-bladder itself. Among these, he enumerates infections within the liver and bile ducts causing changes in the balance of the acidity of the stomach and of the alkalinity of the duodenum, the presence of pyloric spasm, and changes in the pancreas. He calls especial attention to a group of lymphatic glands extending along the common and hepatic ducts and on the cystic duct, and notes that any case of cholecystitis with sufficient infection to produce symptoms will necessarily affect these glands. In the majority of cases, if these glands are much enlarged, one will find a lymphoedema of the head of the pancreas as well as an infection of the gall-bladder; an exception is the general swelling of the mesenteric glands through malignancy or gross abdominal infection. The majority of cases of cholecystitis are undoubtedly best relieved by cholecystectomy.

Davis, C. B., and Lewis, D. D.: Repair of the Common Duct by Means of Transplanted Fascia. *Tr. Western Surg. Ass.*, St. Louis, 1913, Dec.

By Surg., Gynec. & Obst.

Following partial destruction of the common bile duct, temporary continuity of the passage of bile between the ends of the severed duct has been attempted in a variety of ways. Sullivan, in dogs, and Wilms and Brewer, working in man, have used successfully a rubber drainage tube as a link between the hepatic duct and the lumen of the duodenum, while new tissue was developing. Lewis and Davis have transplanted free fascia from the abdominal wall to bridge gaps in the common duct and to patch partially severed ducts.

Dogs were examined and specimens taken for histological examination over a period of one week to two months. At the end of two months the fascial flaps were found alive and lined by a layer of mucosa that had extended from the remnants of the common duct. The bile had passed into the bowel, resulting in normal colored stools. Successful repair of the ureter by means of free transplanted fascia was also reported by the authors.

Seidel, H.: *Acute Necrosis of the Pancreas* (Klinische und experimentelle Beiträge zur akuten Pankreasnekrose). *Beitr. z. klin. Chir.*, 1913, lxxxv, 239.
By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Seidel reports ten cases of acute pancreatitis, giving case histories in detail. The beginning was always acute, except in two instances where indefinite stomach and intestinal disturbances preceded the pancreatitis by several days. The symptoms were those of circumscribed peritonitis. In six cases there was tension in the region of the pancreas. In four cases the urine contained no albumin, and six, only traces of it. In two cases it contained a slight amount of sugar. Cammidge's reaction was tried in four cases before the operation and in three cases afterward. It was positive four times and negative three. A history of alcoholism was found in one case, and was probable in two others. Seven patients suffered from obesity. Gall-stones were present in six cases and absent in three. In one case they were not looked for. Arteriosclerosis was found in one case. In another case, necrosis of the pancreas was caused by stasis in the stomach and duodenum, resulting from a kinking of the intestine. Another patient had a subphrenic abscess which discharged into the pleura and a secondary pleural pancreatic fistula developed.

The author distinguishes three forms of necrosis: hæmorrhagic, necrotic, and purulent. He defines the clinical symptoms belonging to each, and points out that they are merely different stages of the same process. Three of the patients operated upon recovered, while seven died. As far as the pancreas itself was concerned the operation consisted of tampon and drainage.

In the second part of the work the author describes experimental work that he has done on dogs. His conclusions were that bacterial infection through the blood or lymph channels could not be demonstrated as a cause of acute pancreatitis. He is not at all convinced that pancreatic necrosis is caused by embolus, thrombosis, stasis, anæmia, or arteriosclerosis of the pancreatic blood-vessels. Stasis of the pancreatic secretion causes only chronic inflammatory processes and not acute necrosis of the pancreas. The transformation of trypsinogen into trypsin plays an important part in the entrance of toxic substances into the pancreas. Seidel believes that such toxins may enter the pancreas from the duodenum as well as from the gall-passages. Acute necrosis of the pancreas may be caused by the different components of the contents of the duodenum and gall-passages, bacteria, gall, unneutralized gastric juice, fats, oils, soaps, fatty acids, trypsin, etc.

O. NORDMANN.

Blaxland, A. J., and Claridge, G. P. C.: *Remarks on Acute Pancreatitis; with Notes on Seven Cases.* *Brit. M. J.*, 1913, ii, 1423.

By Surg., Gynec. & Obst.

This article is based on six cases observed by the author, all of which terminated fatally — four were

operated on and two died undiagnosed. This is at variance with the ordinary statistics, which give 40 per cent recoveries. In five of the six cases gall-stones were present, and in the other there was evidence of old inflammatory trouble; only one patient gave a history of biliary colic. Three patients had had indigestion for a year with or without hæmatemesis. In all cases there was sudden onset and copious vomiting. In four of the cases collapse was a marked feature. M. S. HENDERSON.

Besley, F. A.: *A Discussion of Pseudopancreatic Cysts; with a Report of Four Cases.* *Tr. Western Surg. Ass.*, St. Louis, 1913, Dec.

By Surg., Gynec. & Obst.

The author first suggests that the name should be changed, the present term not being descriptive of the pathological condition. In a review of the literature he finds that Loyd first accurately described the condition. An analysis of early case reports of so-called pancreatic cysts due to trauma seems to show that most of them were probably pseudocysts.

The author reports from cases which came under his observation — two at Cook County Hospital, one at Wesley Hospital, and one at the Post-Graduate Hospital. All four cases received violent injuries in the upper abdomen, and each case showed some immediate reaction from a mild peritoneal attack. A tumor developed in from ten days to three weeks, appearing as a mass to the left and above the umbilicus. In three cases the distended stomach was above the tumor and the colon below it; in the first case the mass projected above the stomach. Fat necrosis was observed in two cases, and in two cases the fluid contained pancreatic ferments. The four cases reported were all treated by incision and drainage, and all of them made an uneventful recovery.

MISCELLANEOUS

Linkenkeld, J.: *Interpretation of Post-Operative Symptoms, after Laparotomy* (Beitrag zur Beurteilung postoperativer Beschwerden nach Laparotomien). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxiv, 226.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author thinks that the appearance of symptoms due to post-operative adhesions is exaggerated. Symptoms of adhesion appear only when the lumen of the intestine is temporarily or permanently narrowed, when there is traction on the mesentery, or when adhesions of the omentum exert traction. These are the decisive points in operations for adhesions. The persistence of symptoms after operation is generally not due to adhesions, even when they exist, but to a failure of the operation to get at the real cause of the disease. The best procedure, therefore, for avoiding post-operative difficulties is thorough accuracy in diagnosis and indications, before and during the operation. There should be

fewer operations for insufficient indications, and more accurate knowledge as to the significance of symptoms in the region of the cæcum, gall-bladder, and stomach. Of course, the formation of adhesions

may be avoided by careful technique, and by covering all exposed places and the stump of the omentum with peritoneum.

BUTZENGEIGER.

SURGERY OF THE EXTREMITIES

DISEASES OF BONES, JOINTS, MUSCLES, ETC. GENERAL CONDITIONS COMMONLY FOUND IN THE EXTREMITIES

Fehér, A.: Changes in Bones in Infectious Diseases of Childhood (Über Veränderungen der Knochen bei Infektionskrankheiten in Kindesalter). *Virchow's Arch. f. path. Anat., etc.*, Berl., 1913, ccxiii, 295. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

It has long been known that infectious diseases can cause changes even in the bones (Chiari, Fraenkel Kassowitz, etc.). The author made examinations in 35 cases of children, almost all of whom had suffered from scarlet fever, measles, diphtheria, whooping cough. Of the 35 cases there were only 7 that showed no microscopical changes, but even among these there were 4 that showed bacteria in the sections. In infectious diseases in childhood there is almost without exception a distribution of bacteria in the capillaries of the bones, particularly at the boundaries of the cartilage. The changes in the bone consist of a collection of lymphocytes in the cavities of the marrow, and in the proliferation of spindle-shaped cells of osteogenetic origin. These changes correspond to those of the early stages of rickets and to those that are produced experimentally in animals by giving a diet poor in calcium. The author concludes that rickets is to be regarded as the result of inflammatory processes.

MONNIER.

Klemm, P.: Changes in Bone Tissue in Osteomyelitis; and Its Causes (Über die Veränderungen der knöchernen Grundsubstanz bei Osteomyelitis und ihre Ursachen). *Deutsche Ztschr. f. Chir.*, 1913, cxiv, 309. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

From his study of bones affected with osteomyelitis, Klemm believes that the osteoblasts and all related cells take part in bone production. Absorption of osteomyelitic bone takes place in the following way: The infected, proliferating marrow liquefies the bone without forming sequestra; absorption takes place by lacunar corrosion under the influence of special cells, the osteoclasts, which are not formed as such, but originate from the osteoblasts, and can again change their function and become osteoblasts.

THIEMANN.

Skillern, P. G.: Syphilis in the Etiology of Fibrous Osteitis. *Am. J. M. Sc.*, 1913, cxlvi, 531. By Surg., Gynec. & Obst.

Elmslie says, "Beyond the opinion that fibrous osteitis is an inflammatory lesion, we must acknowledge that at present we know nothing of its pathol-

ogy." Bloodgood has not been able to find any definite etiological factor.

The author, after reciting the history of his case, endeavors to establish premises upon which he concludes that this, if not many other similar cases, is due to syphilis of the late hereditary form. The patient, a man of 22, complained of a left-sided limp. He was in perfect health until seven years previous, when, having been thrown from a horse, he sustained a slight injury to the left hip and was treated for fracture. Two years before the fall he had noticed that the thigh was swollen and painful and that the leg was bowed. His family history was directly negative but indirectly suggestive.

Upon examination he showed excellent general health and condition. The left thigh was greatly bowed, the convexity being outward; the femur was thickened and roughened but not tender, and there were no sinuses nor remains of them. The leg was shortened two and a half inches, all of the shortening being below the neck. The chronicity of the lesion, absence of pain when at rest, lack of sinuses or cachexia, with a positive Wassermann, suggested syphilis.

The skiagraph showed an increase in the diameter of the shaft with an interruption of the medullary cavity, with contiguous areas of bone production and bone absorption and a clear line of pathological fracture.

Under a year's mixed treatment, and an ambulatory splint together with neosalvarsan twice weekly, the condition had greatly improved, sufficiently to warrant an osteotomy for the correction of the deformity.

A similar case of Elmslie's is also reported, and from these cases the author concludes that fibrous osteitis, in some cases at least, is identical with late hereditary syphilis of the bone.

The connection of syphilis with this and other bone diseases of obscure etiology should be thoroughly worked out with the aid now afforded by the Wassermann reaction. The disease is curable by conservative measures and may be struck from the fast-shrinking list of bone diseases requiring amputation.

H. A. POTTS.

Percy, J. F.: Osteitis Fibrosa Cystica. *Surg., Gynec. & Obst.*, 1913, xvii, 536.

By Surg., Gynec. & Obst.

The author describes a case of osteitis fibrosa cystica occurring in a girl 23 years old, the disease involving both ilia and the heads of both femurs. The diagnosis was made by means of X-ray pictures.

There was a history of trauma at 6 and 8 years. At 12, the patient developed lameness, some soreness, and pain — at first, on motion; later, continually. The patient was operated upon, the cysts of the femur being curetted, and four months later, those of the left ilium were curetted, and Von Mosteg's bone paste injected. The operation relieved her of all pain and gave her a feeling of security in using the affected joint.

The author reviews the literature and calls attention to the fact that the disease is not so uncommon as its failure of mention in the literature of the English-speaking world would indicate. He notes that many tumors of bone, classed as sarcomatous, are undoubtedly cases of osteitis fibrosa cystica. By analysis of the literature (Boit, Rehn, Bockenheimer), he shows the identity of osteitis fibrosa cystica, Paget's disease, leontiasis ossea, and snuffle disease of swine. He states that the indications for operation can safely be enumerated as follows:

1. Interference with function and the development of deformity.
2. Pressure upon important vessels, nerves, and organs.
3. Prevention of pathological fracture from a large osteoporosis resulting from the disease. When this occurs, operation is contra-indicated, as a process of repair seems to be immediately initiated. It is the author's belief that when the pernicious character of the pathology is considered, especially in relation to the ruinous work of the osteoclastic cells, a permanent recovery cannot be secured, except by radical operation.

Ridlon, J.: Osteochondritis Dissecans. *J. Am. M. Ass.*, 1913, lxi, 1777. By Surg., Gynec. & Obst.

The author reports three cases, and reviews one previously reported by Freiburg. He presents roentgenograms of anterior and lateral views of normal knees and knees showing the above condition.

His cases are of active, vigorous young men presenting knees which have given them trouble now and then through a period of many years, which show nothing save a little swelling, a lack of full extension at times from contracture of hamstring muscles, and now and then give a little pain. Nothing is shown on which to base a diagnosis until a careful study of good roentgenograms is made.

His roentgenograms show a detached body, about the size of a date-seed, on the lower surface of the internal condyle or on the outer aspect of the condyle; or perhaps the lower surface of the condyle has lost its normal convexity. All of his cases refused operation.

In a review of Freiburg's case, the X-ray shows two pieces separated from the internal condyle. On operation there was found a loose body the size of a cherry, attached to the internal condyle by a slender pedicle of connective tissue and synovial membrane. The cartilage appeared different in color, and pressure on it seemed to indicate that it

was loosened from the underlying bone. The author does not discuss etiology. J. O. WALLACE.

Sellheim, H.: The Effect of Castration on the Growth of Bone in the Sexually Mature Organism; and the Relation of Castration to Osteomalacia (Der Einfluss der Kastration auf das Knochenwachstum des geschlechtsreifen Organismus und Gedanken über die Beziehungen der Kastration zur Osteomalacie). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxiv, 362.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

After Sellheim had found, in 1899, from experiments on animals, that castration performed before puberty nullifies the relative cessation in the growth of bone that normally takes place at puberty, he went on with experiments designed to determine the influence of castration on the bones of the sexually mature organism.

He used deer for the experiments. The horns, growing from a core in the frontal bone, which are formed during the time of sexual inactivity, are shed during the time of greatest sexual activity and the period of rest that follows it. If a male fawn is castrated there is no formation of a bony core or of horns; the frontal bone keeps the female form. But if the animal is castrated after the formation of the core, there is a permanent production of bone, instead of the regularly intermittent growth. The demarcation between the horns and the frontal protuberance does not take place at the usual time; the horns are not shed. Through the continuous growth of bone proceeding from the periosteum to the periphery, an enormous formation develops — wig-like antlers.

With the removal of the reproductive glands the periodic inhibitory effect on the growth of bone, at least of the bony core of the horns, ceases. We can, therefore, assume a causal relation between the periodicity of the sexual life and the periodicity in the formation of the horns. The reproductive glands limit the growth of the body at the time of the greatest reproductive demands upon it — mating-time and pregnancy. Perhaps osteomalacia and the favorable effect of castration upon it is explained in this way. If we admit that in human pregnancy the ovary or the changes taking place in it during the puerperium may produce effects later on the metabolism of the mother's bones, osteomalacia may be regarded as a pathological increase of this effect; or if we assume an abnormal constitution on the part of the mother, it is a pathological effect of a process that is, in itself, normal. BISCHOFF.

Vaughan, R. T.: Multiple Exostoses: An Hereditary Affection of the Bony Skeleton. *Tr. Western Surg. Ass.*, St. Louis, 1913, Dec.

By Surg., Gynec. & Obst.

The points which are emphasized by the author are: That all cartilaginous exostoses are congenital in origin, being demonstrable probably at birth, though usually not recognized by patients or clini-

cians until years later; that the tendency to their formation is hereditary and transmissible; that they are frequently accompanied by other developmental defects of the skeleton, some of which are characteristic of the affection; and that these tumors may be accompanied by congenital defects of other body structures.

The stunted growth of these individuals is what strikes the attention at once. They look like rachitic dwarfs, but do not have the static deformities of the long bones, as do rachitics. Their most frequent and characteristic deformity is the defect in the lower epiphysis of the ulna, which leads to a compensatory bowing of the radius, accompanied by ulnar dislocation of the hand and sometimes dislocation of the radial head, especially when the latter is large and deformed. Synostosis of the radius and ulna sometimes occurs, as in one of the cases shown, and also synostosis of the tibia and fibula. Genu valgum and pes equinovarus have been noted. Locking of the joints may occur with large exostoses. Sometimes the tips of the exostoses are provided with a bursa, which at times connects with neighboring joints.

As a rule, cartilaginous exostoses and enchondromata appear in the first years of life, most frequently between the fourth and sixth years. In many or most cases, however, the exostoses are first recognized by the physician, since they may cause the patient no symptoms. The more carefully the newborn children in exostosis families are examined, especially with the X-ray, the more frequently will congenital exostoses be discovered.

The fact that cartilaginous exostoses as well as enchondromata represent congenital anomalies of the skeleton has not been generally recognized and accepted until a comparatively recent time. Since these tumors are usually not noticed until late in youth, when they obtain a considerable size, and since the patients themselves usually consider them an acquired affection, the medical profession has been late in recognizing their congenital origin. Of late years, however, there have been a number of cases recorded in which these exostoses were noted at or shortly after birth.

The hereditary character of the affection was known long before the fact came to light that these exostoses are frequently congenital and that more males are affected than females. Reinecke, Teissier and Berard, Boyer, Fischer, Sonnenschein and Drescher, Weber, and others have described such exostosis families.

The etiological factors of these bony and cartilaginous growths are practically unknown. In several exostosis families intermarriage of near relatives has been noted. According to von Bergmann, it is a disease *sui generis*, representing a disturbance in growth of the intermediary cartilage, due to an original defective anlage. Various authors have considered that rickets might be a factor in the origin of the affection. Doubtless numerous mistaken diagnoses have given rise to this idea, inas-

much as the deformity has been considered due to rickets, instead of to the exostoses and their associated cartilaginous and bony defects. No direct connection between the two diseases has ever been demonstrated positively. Histological examination shows that the arrangement of the cartilage cells in growing exostoses is different from their arrangement in rickets. In some of these cases a small and barely palpable thyroid has been found; in other cases there has been lack of development of the sexual function.

Multiple cartilaginous exostoses are, as a rule, a harmless affection, the disturbances in the wrist and elbow-joints being the most bothersome. A few exostoses may, on account of their location, become very burdensome, but are rarely dangerous. Those exostoses which lock the joints may be removed. Neuralgia, paralysis, epilepsy, apoplexy, defective hearing, dystocia in labor and rupture of the uterus, exophthalmos, rupture of the popliteal artery with aneurism formation, and also malignant degeneration, have been described.

In view of these severe, even if infrequent complications, and the considerable and not infrequent deformities occurring in this disease, the undesirability of the intermarriage of members of exostosis families, in the light of Mendel's law, should be recognized by physicians and eugenicists.

Fay, O. J.: Traumatic Periosteal Bone and Callus Formation: The So-Called Traumatic Ossifying Myositis. *Tr. Western Surg. Ass., St. Louis, 1913, Dec.* By Surg., Gynec. & Obst.

Fay reports six cases of traumatic intramuscular ossification, and reviews the literature on the subject. In four of his cases, the brachialis anticus was the muscle involved; in two, the vastus medius. In two cases, the ossification followed a dislocation of the elbow; in three other cases, a contusion was the determining factor; while in the remaining one, there had probably been a rupture of the muscle. The youngest patient was 16, the oldest 50.

None of the four theories advanced to explain the pathogenesis of these intramuscular bone formations (the hæmic theory, the theory of aberrant sesamoid bones, the theory of periosteal detachment or dissemination, or the theory of ossifying myositis) is entirely satisfactory. The first two have found but few supporters; the third does not explain muscle ossification in muscles not overlying the bone; while the fourth, in so far as it assumes a hæmatogenous infection, lacks clinical evidence. Histologically, the bone mass is found to bear a close resemblance to the callus of fractures; the whole picture is that of a reparative process, the damaged connective-tissue cells having temporarily lost their differential function and become osteogenetic. Since the term myositis ossificans traumatica emphasizes the inflammatory rather than the reparative nature of the ossification, the author prefers the appellation parosteal callus.

The early symptoms are those of any contusion,

but the functional does not keep pace with the objective improvement, and an indurated mass becomes palpable. While the clinical picture and the history of trauma may suggest the presence of a parosteal callus, the radiograph is essential to differential diagnosis.

Operation is indicated where there is functional disability or where the parosteal callus interferes with the blood or nerve supply. The prognosis is good unless there is periarticular ossification. Early operation must be radical, and all damaged tissue must be removed to guard against a recurrence, but better functional results are obtained if the callus is allowed to "ripen." A conservative operation is then possible and the maximum amount of muscle tissue is saved.

Möller, B.: Etiology of Bone and Joint Tuberculosis (Zur Ätiologie der Knochen- und Gelenktuberkulose). *Deutsche med. Wchnschr.*, 1913, xxix, 1826. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

While 99 per cent of all pulmonary tuberculosis is caused by the human tubercle bacillus and only 1 per cent by the bovine type, in bone and joint tuberculosis the bovine bacillus appears in 2.45 per cent of the cases. The author bases his conclusions on 12 cases of his own and 163 cases from the literature, and differs from the conclusion of John Fraser of Edinburgh, who, in 70 cases of children under 5 years of age, found the bovine bacillus in 72.72 per cent, and the human in 27.27 per cent, which he attributes to the exclusive milk nourishment in early childhood and the slight resistance of the mesenteric lymph-glands. These figures differ from those of all other authors.

RUPP.

Rollier, A.: Sunshine Treatment of Bone and Joint Tuberculosis (Über die Sonnenbehandlung der Knochen- und Gelenktuberkulose). *Ztschr. f. orthop. Chir.*, 1913, xxxii, 337.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Rollier accustoms his patients gradually to complete exposure to light and the sun's rays for a period of ten to twelve days, beginning always with exposure of the lower limbs and protecting the head, eyes, and heart. During this time there is a total irradiation of 4 to 8 hours, divided into 6 to 8 periods. Joint tuberculosis is treated principally. The first step is to remove every sort of immobilizing bandage or apparatus. The patient should have a hard bed with a single hard, smooth, flat mattress; over this the sheet should be drawn smoothly and fastened at the four corners. There should be a sand pillow and an air cushion under the pelvis. A tight-fitting cloth jacket that can be unbuttoned is worn on the body. The treatment of the individual joints can easily be understood from the original, as it is profusely illustrated, and follows the general principles of surgical extension treatment, allowing the greatest possible freedom for the action of the sun's rays; the abdominal position is preferred.

The results of the treatment, which is carried on

for two or more years, are surprising: there is improvement in the general health, cessation of suppuration, healing of fistulas and abscesses, and restoration of the joints to normal condition, anatomically as well as functionally. Where complete sunlight treatment cannot be carried out, Rollier uses deep irradiation with röntgen rays by Iselin's method, avoiding overdosage. Surgical procedures are reduced to a minimum and tuberculin treatment is not used.

MAYERSBACH.

Tuffier: Osteo-Articular Grafts (Sur les greffes ostéo-articulaires). *Bull. et mém. Soc. de chir. de Par.*, 1913, xxxix, 1139. By Journal de Chirurgie.

TUFFIER reported a case of transplantation of bone and cartilage by Duval. The patient, a woman of 21, had an irreducible luxation of the right shoulder. He resected the head of the humerus and substituted the head of the first metatarsal from another patient. At the end of six weeks the patient could lift her hand to her mouth, and, with some effort, to her head. In connection with this case he studied the ultimate fate of osteo-articular grafts in another patient. He showed X-ray pictures, taken every 6 months, of a young man in whom he had resected the elbow and substituted the tibio-tarsal joint of a woman. They showed that the internal malleolus had gradually been absorbed, but the remainder of the tibia had assumed its function. They did not show what part of the new joint was formed by new and what by old bone, but it could be seen that some pathological process was taking place. The bone on which the graft had been made had been affected with suppurative osteitis for two years.

MURPHY says that grafts are absorbed in time, and replaced by new bony tissue originating from the old bone. But Rehn says the graft at first undergoes cellular degeneration, followed by regeneration of its own substance. However, as the grafted joint permits of normal and useful movements its efficacy cannot be disputed.

MORESTIN is sceptical as to the results of the transplantation practiced by Duval. He says the functional result obtained cannot be attributed to a small osteo-cartilaginous fragment, but that resection, pure and simple, would have accomplished the same result. He thinks that many so-called irreducible luxations could be replaced and that even resection is too readily resorted to.

DELBET says that the expression "articular graft" used by Tuffier causes confusion, because it would lead one to suppose a whole joint was being transplanted, when, as a matter of fact, only small osteo-cartilaginous grafts are being made.

Successful transplantation of a whole joint has been performed only once by LEXER. He does not believe much in the utility of small grafts. He believes, however, that bone grafts very well. He reported a case in which a graft from the fibula lived and fulfilled its physiological function, which he considers the important point.

MAUCLAIRE gives the results which he has obtained with osseous grafts for various lesions of the bones without drawing any conclusions as to the efficacy of the procedure in general. He reports:

1. Two cases of grafts to repair defects in the diaphysis of long bones resulting from the removal of osteo-sarcoma, with recurrence in both cases.

2. In intramedullary grafts for fractures of the diaphysis employed in a case of fracture of the humerus, he transplanted a fragment of the patient's fibula into the medullary cavity, leaving it covered with periosteum. After 18 months there was no pain or disturbance in the function of the arm. During the past year he treated six cases of fracture of the tibia with intramedullary grafts from the fibula. Four times he had to remove the grafts because of hæmatoma, which is produced very easily in the marrow by inserting the graft. Once the operation was well borne, but he has not seen the patient since. In the other case, radiography shows the fragment of the fibula in the medullary cavity maintaining the contact of the fragments. The patient walks well. In none of the cases was there any disturbance of function in the leg from which the fibula was removed.

In cases of pseudarthrosis, grafts from the fibula are of great service, of which method Pierre Delbet and Murphy have reported successful cases.

Murphy had a case of depressed fracture of the brain with a large number of irregular fragments, which were removed. Six months later a very large encephalocele occurred. He applied a fragment of fascia lata with muscle attached to the brain, the muscle lying next to the surface of the brain to prevent post-operative adhesions. Over this he placed a fragment from the inferior angle of the patient's own scapula, but it did not entirely fill the defect and was movable, and four months later the lower half of it had to be removed on account of necrosis. As the encephalocele is insignificant in size and the patient is able to work, the operation may be regarded as successful in spite of the unfavorable conditions.

In another case, Murphy treated a similar fracture in a child of 10 years with complete success, although the graft did not entirely fill the defect. The successful result was probably due to the youth of the patient.

3. In graft to replace a bony fragment removed on account of osteitis, the fourth metacarpal was removed for chronic tubercular osteitis and replaced by a fragment from the fibula, but as the operation was performed in June, 1913, it is too early to know the result.

4. In partial graft of the joint for ankylosis of the elbow, the elbow was resected and cartilage transplanted from the tibia and astragalus of an amputated leg. There was a recurrence of ankylosis, but radiography shows that the grafted cartilage is living and well fused with the humerus.

J. DUMONT.

Niosi, F.: Hæmophilic Joint Disease (Les arthropathies hémophiliques). *Clin. chir.*, 1913, xxi, 1797. By Journal de Chirurgie.

Niosi reports two cases of hæmophilic joint disease observed in children in the surgical clinic of Ceci, at Pisa.

The first patient, a boy of six, had been sent in with a diagnosis of white swelling of the knee. The knee was very much swollen, flexed at an angle of 145 degrees on the thigh, slightly painful on pressure at the level of the internal condyle, and there was ballottement of the patella. Active motion was impossible, passive motion limited, but there was no appreciable muscular atrophy.

Attention was attracted by the peculiar course of the so-called white swelling, and a history of hæmophilia was elicited in the patient and one of his parents. Several times he had had severe hæmorrhages from insignificant superficial wounds; the least blow caused ecchymoses and even true hæmatomata; several times nose-bleed had been so severe as to require tamponing of the nasal fossæ. The lesion of the knee had followed suddenly after a slight twisting of the joint. The diagnosis was based on these facts.

The only treatment possible was to immobilize the limb and exercise continuous traction on it by means of weights. An apparent cure was effected, but two months later there was a recurrence without any apparent cause. The treatment was begun again, and resulted in a complete cure.

The second case was a child of eight, brother of the preceding one. He had an affection of the elbow which had some resemblance to white swelling. But he was also evidently a hæmophilic, and had had several similar attacks in the ankle and the finger-joints. The affection of elbow was cured after rest. In connection with these two cases, Niosi reviews the question of hæmophilic joint diseases.

PIERRE FREDET.

Brehm, O.: The Origin of Joint-Mouse (Zur Kasuistik der Gelenkmause.) *Deutsche Ztschr. f. Chir.*, 1913, cxxiv, 81.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author has had two cases of joint-mouse which were typical examples of the two chief clinical types. In the first case, there were two very large completely calcified bodies, one of them larger than a patella, with a convoluted surface similar to that of the brain. They were found in the knee-joint of a 56-year-old man. The joint had undergone marked inflammatory changes, and contrary to the usual rule, the symptoms caused by the joint-mouse were the predominant ones and demanded extirpation. In the other case there were solitary, but recurring, small, round, flat bodies in a practically normal joint with the characteristic joint-mouse symptoms. The author agrees with Axhausen's opinion that these movable bodies originate from aseptic cartilage or bone necrosis with a resulting local arthritis, as a consequence either of traumatic subchondral hæm-

orrhage (Lexer), embolism (König. jun. Müller), or inflammatory processes.

The great majority of joint-mice are of inflammatory origin, a smaller number of traumatic origin. This anatomic-pathological distinction has no practical value, for the question of extirpation depends on whether or not the symptoms caused by the tophi are the predominant ones. In solitary bodies in almost normal joints this is generally the case; in arthritic joints with several tophi it is generally not true. Cases of the latter group, therefore, do not generally require operation. SIEVERS.

Von Manteuffel: Experimental Arthritis Deformans (Über experimentelle Arthritis deformans). *Deutsche Ztschr. f. Chir.*, 1913, CXXIV, 321.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author gives a detailed report of experiments which he carried out to produce changes in the skeleton by artificial freezing and congestion. Rudnicki, in similar experiments on the soft parts, found artificial sclerosis of the vessels, and the tissue changes dependent on it; Von Manteuffel produced the changes in the articular ends of the bones that are characteristic of arthritis deformans.

The freezing was produced by directing a spray of ether against the shaved hind leg of a guinea pig for 3 to 7 minutes, and the congestion by tying a rubber tube around the thigh for 13 to 47 hours. Similar changes were produced by both methods, but to a more pronounced degree by the freezing. The cells of the joint cartilages stained irregularly and there was a dulling of the surface; there were hæmorrhages in the region of the joint and a contraction of the cartilage, with secondary proliferation in the cells of the capsule of the cartilage; one or more medullary spaces approached the capsule and consumed it; and finally there was a complete disappearance of the cartilage and of the entire joint, with connective-tissue ankylosis of the two bones.

The author observed changes in the joint capsule similar to those in the cartilage. The vessels showed swelling and then proliferation of the intima cells, until finally the whole lumen of the vessel was closed. He could not determine an etiological relationship between these changes in the vessel and those in the bones and cartilages. He comes to a different conclusion than Rudnicki's as to the soft parts, but he believes he has demonstrated that the changes caused in the joints by cold and congestion may be regarded as an artificially produced arthritis deformans. KNOKE.

Beck, E. G.: Treatment of Tuberculous Hip-Joint Disease with Coexisting Sinus, by Means of Bismuth Paste; Report of 102 Cases. *Tr. Western Surg. Ass.*, St. Louis, 1913, Dec.

By Surg., Gynec. & Obst.

The author relates his experience in treating 102 cases of tuberculous hip-joint disease during the past eight years, most of the cases being at the lowest stage, riddled with suppurative sinuses. His experi-

ence has taught him new points in the treatment of these cases, not only from the therapeutic standpoint, but also from the diagnostic and preventive standpoint. He cites many interesting cases and demonstrates the following points:

1. It has been found that hip-joint disease in its incipient stage is too frequently diagnosed as rheumatism. Two-thirds of his cases gave the history of having been treated in the beginning for rheumatism or sciatica.

2. It has further been noted that when the disease had progressed to the stage of abscess formation, incision and drainage had been employed as a rule, a method which is now of course generally condemned.

3. It has also been noted that sacral tuberculosis, or that of the sacro-iliac joint, is frequently taken for hip-joint disease, the author having met with five such cases. The reason for this mistake is explained by the similarity of the swelling and contracture of the limb on the affected side, which is also found in hip-joint cases. The radiogram is the deciding factor in such cases. This aid had been employed, previous to the examinations noted, in only two out of the five cases, and the pictures taken were not sufficiently clear to make interpretation possible.

4. Another rather rare complication occurred in four cases, namely, the hip-joint disease produced a rectal fistula. These belong, of course, to the most severe type of joint destruction, in which the abscess has spread along the path of the fascia, usually through the notch below the anterior superior spine, then along the pelvic fascia toward the pararectal tissues, and there either opened into the rectum or around the anal opening.

5. The acetabulum is affected in the majority of hip-joint cases. Rarely does it break through into the pelvis and allow the abscess to find its way into the pelvis, the author having but one such case on record. The iliac bone is affected in about 5 per cent of the cases.

Kirmisson: Malformation of the Tibio-Tarsal Joint, Known in Germany as Volkmann's Deformity (La malformation de l'articulation tibio-tarsienne connue en Allemagne sous le nom de déformation de Volkmann). *Rev. d'orthop.*, 1913, No. 5, 385.

What is called in Germany Volkmann's deformity is not, as the surgeon of Halle thought, a congenital luxation of the joint between the tibia and the tarsus. It is, as Bidder has shown, and as Kirmisson has proved anew, a malformation characterized by an abnormal obliquity of the line of articulation between the tibia and tarsus, due to an arrest of development in one of the bones of the leg, either the tibia or the fibula. These bones are not absent congenitally, but they are imperfectly developed.

In the great majority of cases it is the lower end of the fibula that is arrested in development; therefore, the line of articulation is oblique from below

upward and from within outward. The foot presents talipes equino-valgus. Volkmann's is a typical case.

In rare cases the deviation is in the form equinovarus, as in Burckhardt's and Kirrison's cases. It is best not to be hasty in treatment, in this as in most cases of congenital malformation of bones, for there is danger of recurrence.

During the first few years of life an apparatus may be worn which will enable the child to walk and prevent the progress of the deformity, but this treatment is only palliative.

The surgical procedure of choice is tibiotarsal ankylosis. Tenotomy, though overcoming the equine deformity, requires the wearing of an apparatus to maintain it. Wedge-shaped osteotomy of the most completely developed bone corrects the malformation, but it does not assure the persistence of this correction, because the obliquity of the line of articulation persists and tends to reproduce the deformity.

Ankylosis gets at the cause of the deformity, modifies the direction of the line of articulation, and brings about definite correction of the deviation of the foot. It should be extensive enough to be completely curative. Kirrison thinks that it should not be performed until the tenth year.

ALBERT MOUCHET.

SURGERY OF THE BONES, JOINTS, ETC.

Quénu, E., and Gatellier, J.: **Treatment of Old Fractures of the Patella** (*Revue sur le traitement des fractures anciennes de la rotule*). *Rev. de chir.*, 1913, xlix, 173.
By Journal de Chirurgie.

Old cases are in all respects worse subjects for operation than recent ones. They are rare, however, as fracture of the patella is now universally treated by early operation. Results justify this treatment: there is not more than one death in 500 cases operated on; recurrence of fracture is much rarer; and restoration of function is rapid and perfect. Old fractures, therefore, are generally those where there has been some contra-indication to immediate open operation.

The author defines old fractures as those of from six weeks' to two months' duration. In these, there is generally pseudarthrosis and no osseous callus; the upper fragment rises to the subcondyloid region and adheres there; the lower fragment moves toward the tibia, and both become encapsulated with fibrous tissue. There is retraction of the surrounding fibrous tissue, arthrosynovitis, and atrophy of the quadriceps.

The patient finds walking painful; he cannot walk on an inclined plane, and on uneven ground he frequently falls. These conditions cause sprains, hydrarthrosis from blows, and repetition of the fracture on the same or the opposite side. Operation becomes necessary, but is difficult on account of the separation of the fragments. It may consist of osteosynthesis, autoplasmic operation, or even of

extirpation of the patella. The methods of several different authors for each are described in the article. Lucas-Champonnière reinforces the fibrous callus with metal wires which form a hinge. Chaput has performed subperiosteal resection of the upper fragment.

Since 1893 the results have been excellent in 80 per cent of cases, good in 17 per cent, with death or failure in 3 per cent. The simplest procedure should be tried first—traction on the patellar tendon or V-shaped incisions. The mobilization of the tuberosity of the tibia may be necessary to secure coaptation. In case of failure of osteosynthesis it is necessary to perform an autoplasmic operation, and Quénu and Gatellier prefer Ferraresi's method of utilizing the quadriceps.

J. OKINCZYC.

Petroff, N. N.: **Transplantation of Bone** (*Die freie Knochenplastik*). St. Petersburg: Ettinger, 1913.
By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

This monograph is divided into an experimental and a clinical part. In the first part the author gives a short review of the literature of the question (Ollier, Barth, Marchand, Axhausen, Frangenheim). From these works and his own earlier work he concludes that the fact of the regeneration of bone after transplantation is confirmed. The topographical distribution of the new layers of bone has even been made out, but the question of the origin of this new bone is not settled.

The first law in bone transplantation is that living bone of the same species, or, better still, of the same individual, must be used. The author cites his own experiments to illustrate the difference in the practical results obtained by transplantation of bone with and without periosteum, and in autoplasmic and homoplasmic transplantation. In 12 rabbits, 2 to 3 cm. of the diaphysis of the radius or ulna were resected, and the defect was filled in 7 cases by homoplasmic transplantation, in 5 cases by autoplasmic.

In the homoplasmic transplantations periosteum alone was used—a piece of rib covered with periosteum and a rib without periosteum. The bone without periosteum was quickly absorbed. In the autoplasmic transplantations the same principles were carried out. The bone without periosteum lived and thrived almost as well as that with periosteum.

The author gives further experiments in repairing skull injuries. In 7 cases, dogs and rabbits, the defects in the skull were covered by the autoplasmic transplantation of pieces of rib; they lived and closed the aperture firmly. The bone-forming capacity of the dura mater is very slight. Two defects were not covered, and after six weeks there was a thin plate of bone in both rabbits. Four defects were covered with decalcified bone, two with heated bone, and five with celluloid plates. Repair can be effected by any of these methods.

The general rules for bone transplantation are discussed. The individual's own bone is considered

the best material. Homoplastic transplantation should be done only when this is not available, and, in the latter case, bone covered with periosteum should be used. Transplantation of bone from the corpse (Küttner) should only be used in exceptional cases. The transplanted bone must be closely applied to the soft parts; fixation of the bone is best secured by wedges of bone. In regard to osteoplastic operations on the skull, the author thinks, as a general rule, openings in the skull should be closed. In fresh traumatic injuries of the skull the primary reimplantation of the injured bone is to be recommended. Seventy-three cases of this kind are known (Stieda, Bunge, Brewitt, Frank, Schaack).

In secondary operations, Müller-König's method or some of its modifications should be used (Hacker-Durante, Leotta), and the aperture may be closed with pieces of tibia (Seydel) or of rib (Loebnhoffer).

The article also discusses plastic operations on the lower jaw, bones of the face, nose, spinal column, and clavicle. For the lower jaw, parts of the jaw itself may be used, or pieces of rib or tibia. Successful cases are known with all these methods. In this case transplantations from the clavicle and rib with pedicles may also be made use of. Bone transplantation is of service in rhinoplasty, but the Russian material on this subject has been treated in a monograph by Pawloff-Ssilwanski. Attempts at osteoplastic operations on the spine have been made by Nibbs in kyphosis and by de Quervain in dislocation of a vertebra.

SCHAAK.

Poljenoff, A.: Plates and Nails in Bone Surgery (Klammern und Nägel in der Knochenchirurgie). *Arb. a. d. Gouv.-Krankenh.*, Ssimbirk, 1913, No. 3, 16. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author recommends in all cases of fracture where ideal coaptation of the ends cannot be obtained by immobilization and extension, the employment of open replacement and fixation by plates or nails, which can afterwards be removed and so leave no disturbing foreign body. He has modified Lambott's plates in such a way that there are two nails instead of one at each end, and they are perpendicular to the long axis of the plates so that a lateral displacement of the fragments is impossible. In thin long bones where a displacement in the direction of the axis might occur, he prevents it by twisting a wire around the end of the fragment and knotting it over the plate. The wire is afterwards removed, together with the plate, under which the edges of the wound are united by sutures; decubitus is not necessary. The author has successfully used plates and nails in the replacement of pieces of bone with the muscles attached to them. He describes 12 cases of fractures and ankylosis of joints; in one case he used Steinmann's method of extension with nails.

HILSE.

Harris, C. H.: Arthroplasty. *Tex. St. J. Med.*, 1913, ix, 213. By Surg., Gynec. & Obst.

Arthroplasty may be primary, following fresh articular fracture, or secondary, to replace old,

neglected fragments, or to correct ankylosed joints. Previous to the development of the muscle and fascia flaps — technique first used about 1865 — correction of ankylosis consisted in chiseling through the joint, followed by passive and active motion. The results were poor. Murphy was the first to use pedunculated fascia flaps, but Behn has shown that the pedicle is not necessary.

Arthroplasty is indicated in ankylosis as a result of arthritis, fibrous ankylosis, and unreduced fractures and dislocations that have resisted conservative treatment, and in cases where resection is demanded because of disease. It is contra-indicated in cases before the union of the epiphysis to the diaphysis; in old age; immediately after severe fractures; during active pathologic lesions; in cases of extreme atrophy of the muscles concerned with the joint, and where there is no subcutaneous fatty tissue. The author reports four of his cases with good results.

W. C. CLARK.

Ryerson, E. W.: The Surgery of Infantile Paralysis. *J. Am. M. Ass.*, 1913, lxi, 1614.

By Surg., Gynec. & Obst.

The paper deals with the treatment of paralysis of the legs and trunk, and the author calls attention to the fact that the prevention of deformities during the two years following the onset of the paralysis, the period of spontaneous repair, deserves a great deal of attention. Precautionary measures such as the use of splints and retentive apparatus, massage, and galvanic electricity are found efficacious.

The correction of the late deformity must precede or accompany the operation for retaining the part in the proper position: This may include manipulation, forcible redressment or operations on the tendons and bones. The author prefers the open lengthening of the Achilles tendon to the subcutaneous tenotomy, as too great lengthening may occur in the latter.

The principal problem is to retain permanently the correction attained, and this result is brought about most satisfactorily by tendon transplantation or by silk-ligament suspension.

The Vulpis method, the transplantation of the entire healthy tendon, or a portion of it, into the tendon or muscle which it is intended to strengthen, has been found of value by Ryerson in only a limited field. It may be used in the arm or forearm, or in supplying power to the flexors or extensors of the toes, where there is no great amount of strain.

The periosteal implantation of Lange gave more satisfaction, but was not strong enough in cases of drop-foot. In one case, two years after operation, there was found a lengthening of one and one-half inches, due to a gradual stretching of the periosteal attachment.

Codivilla's method of nailing the tendons to the bones is not considered so reliable as the direct suture with silk.

When sufficient muscles remain to justify transplantation, the author believes that the best

anchorage is obtained by drawing the tendon through a one-sixteenth-inch drill hole in the bone; the free end of the tendon is then passed through a slit in the "standing part" of the tendon, and is then itself split and the ends brought around the standing part and fastened with several interrupted fine silk sutures, thus firmly anchoring the tendon to the bone.

When transplantation is not feasible, on account of extensive paralysis, the foot can be made useful by permanently checking the foot-drop. Arthrodesis should not be done, however, in children under 14 years of age; silk-ligament suspension is considered more satisfactory. The author uses bichloride braided-silk, size 12 to 16. It is passed through a drill hole bored in the base of the first metatarsal bone; from there it is passed within the tendon sheath of the tibialis anticus, under the annular ligament to a point 2 or 3 inches above the ankle joint, emerging through a tibial incision. A similar procedure on the outer side of the foot is carried out, anchoring the distal end of the silk to the base of the fifth metatarsal, and carrying it upward within the sheath of the peroneus tertius, emerging through the tibial incision; a drill hole is bored through the crest of the tibia and the two silk ligaments secured with the foot held in the proper position. *Pes calcaneus* may be benefited by lengthening the semitendinosus with heavy silk, which is inserted into the *os calcis*.

Nerve grafting, after the method of Spitzzy, has not met with success in the hands of the author.

ROBERT B. COFIELD.

Little, E. M.: The Treatment of Spastic Paraplegia: Little's Disease. *Brit. M. J.*, 1913, ii, 1132.

By Surg., Gynec. & Obst.

In considering the treatment of spastic paraplegia, under pathology, the author quotes Küttner as saying, "The subcortical centers are continually spurred but not bridled." He favors early treatment. As a general outline of treatment he advises measures to aid putting the patients on their feet—tenotomies, tenoplasties, manipulations, myotomies, etc., the main thing to attain being the abduction of the limbs and training. Much depends on the mentality of the patient. These measures failing, he advises neurotomy, complete, as advised by Lorenz, though no longer favoring it; partial neurotomy according to Stoppel; or alcohol injection as advised by Allison. He makes a plea for Foerster's operation for the severe cases. He sees no need to do this in two stages. He mentions a case of his own which, though not ready to be reported, is doing well.

M. S. HENDERSON.

Sharpe, W., and Farrell, B. P.: A New Operative Treatment for Spastic Paralysis; a Preliminary Report. *J. Am. M. Ass.*, 1913, lxi, 1982.

By Surg., Gynec. & Obst.

The authors present a preliminary report of a new method of treatment in spastic paralysis, based on a

series of twelve cases. Spastic paralysis frequently results from a lesion of the brain occurring prior to, during, or shortly after birth. It is characterized by more or less complete paralysis of the part affected, associated with stiffness or spasticity depending upon the involvement of the pyramidal tracts. Athetoid movements of the extremities and Jacksonian epileptiform attacks may frequently be observed. The paralysis and contractures increase as the child grows older and usually there is a progressive mental impairment. The most common lesion is that of intracranial hæmorrhage, causing cortical clot over the cerebrum and the resulting pathological changes. This type forms about 70 per cent of all cases.

The remaining 30 per cent are due to agenesis and malformations of the cerebral cortex; to cases of meningo-encephalitis complicating the acute infectious diseases.

In those cases of spastic paralysis in which the clinical history suggests a cortical lesion and in which there is present an increased intracranial pressure as shown by the ophthalmoscope, a right subtemporal decompression operation is performed. If the pressure is not sufficiently relieved by this first operation, a second or left subtemporal decompression is done within a month. This operation is performed to offset the effects of the pressure caused by the cerebral lesion—usually hæmorrhage with cystic formation. The pathological lesions present are dealt with at the same time or later, depending upon indications.

The result of this treatment has been a lessening of the spasticity and a definite amelioration of the patient's mental condition. The after-treatment consists in overcoming the deformity according to orthopedic principles. Two cases are reported in detail.

One of the most important advantages of this method is the improvement of the patient's mental condition to such a degree that the co-operation of the patient is obtained in carrying out the after-treatment. Sufficient time, however, has not elapsed to make any definite assertion as to permanency of results.

This procedure is of value only in those cases of spastic paralysis that show signs of increase in intracranial pressure. Cases of agenesis and malformation do not show increased pressure, and are therefore easily excluded by thorough and careful examinations. A more complete report will be published later by the authors. A. C. BACHMEYER.

Rich, E. A.: Limitations of Lange's Silk Ligaments in Paralytic Surgery, and Substitutes Therefor. *J. Am. M. Ass.*, 1913, lxi, 1597.

By Surg., Gynec. & Obst.

The author gives his personal experiences with silk ligaments in forty-eight selected cases. He does not use them below the knee, because irritation produced by shoes or lacings necessitates the removal of

the silk. In the shoulder and elbow he has used them with gratifying success.

He then describes a capsule-tucking operation which he does to limit the mobility of paralyzed joints. Taking as an example an equinus deformity, he makes elliptical skin incisions transversely across the ankle-joint, retracts the tendons, and splits the ankle-joint midway between its attachment to tibia and astragalus with a full horizontal incision; the two lips of the capsule are seized with hæmostats and are overlapped sufficiently to correct the toe-drop, and mattress-sutured with very heavy chromicized catgut. As a result, heavy scar-tissues form about the site of the sutures. In addition he shortens tendons, overlaps fascia, and brings the skin together — minus the skin-flaps removed — between the original incisions.

He sums up by saying that silk is a foreign body and its use is not justifiable around the ankle-joint.

J. O. WALLACE.

Singley, J. D.: The Operative Treatment of Hallux Valgus and Bunion. *J. Am. M. Ass.*, 1913, lxi, 1871. By Surg., Gynec. & Obst.

The author describes a modification of Fowler's operation for hallux valgus. He makes the incision along the outer side of the metatarsal head close to the bone, dissecting all the tissues from the dorsal to the plantar surface and dividing the external lateral ligament so that the great toe may be dislocated inward and reversed, exposing the metatarsal and phalangeal surfaces of the joint directly before the operator. Both the metatarsal and the phalangeal surfaces are reshaped with a narrow jig-saw, the former being convex and the latter concave, from before backward, so as to prevent lateral displacement. Then the metatarsal end is covered with a flap of fatty fibrous tissue, dissected from the tissues covering the intermetatarsal space and sutured in place.

The tendon of the extensor proprius hallucis is divided and the toe returned to place and sutured, the capsule being sutured first, then the overlying tissues, then the skin incision. Drainage with a few strands of catgut is advised. The foot is protected afterward by a cigar-box splint or a splint along the inner side of the foot, of plaster of Paris, to which the toe is bandaged. The advantages claimed for the operation are mobility of the joint and absence of liability to recurrence.

J. L. PORTER.

ORTHOPEDICS IN GENERAL

Ogilvy, C.: Recent Progress in Orthopedic Surgery. *N. Y. M. J.*, 1913, xcvi, 997.

By Surg., Gynec. & Obst.

Ogilvy reviews briefly, but interestingly, the progress that has been made in the past decade in anterior poliomyelitis, congenital dislocation of the hip, operative treatment of Pott's disease, mobilization of ankylosed joints, and rotary lateral curva-

ture. His conclusions in regard to rotary lateral curvature are:

1. That the fixed type of rotary lateral curvature, developed in childhood and persisting in adolescence, cannot be perfectly cured.

2. That the general condition of the patient can be much improved.

3. That the anteroposterior postural deformity can be corrected.

4. That the lumbar lordosis can be corrected.

5. That the lateral deviation of the body can be corrected.

6. That the lateral deviation of the spine is corrected in earlier cases.

7. That the rotation of the vertebræ may be improved but not corrected.

8. That the results obtained by the use of the plaster jacket applied by the Abbott method in flexion, with corrective pads, are very satisfactory, in that the results, above enumerated, are possible to be obtained in a shorter time (within six months) than by any other method of treatment heretofore practiced.

CHARLES M. JACOBS.

Colliver, J. A.: Early Symptoms of Poliomyelitis, with Special Reference to a New Preparalytic Symptom. *Calif. St. J. Med.*, 1913, xi, 443.

By Surg., Gynec. & Obst.

During an epidemic occurring in Southern California, in 1912, the author noted, in addition to the classic symptoms, in the preparalytic stage a peculiar twitching, consisting of tremulous or convulsive movements of certain groups of muscles, lasting from a few seconds to less than a minute, which did not occur oftener than every hour, unless the patient was disturbed. The amplitude of vibration was greater than a tremor, not so constant and long as a convulsion, and more regular than mere twitching, yet some of the elements of all being present. It usually affected a part or whole of one or more limbs, the face or jaw, but sometimes it affected the entire body. This condition was often accompanied by a cry similar to the hydrocephalic. At times there was a slight convulsive movement, during which the child was apparently unconscious, with eyes set for a few seconds, followed by an immediate return to consciousness. The phenomenon resembled the condition found in strychnine poisoning except that the tetanic contractions were not general and did not last for any length of time.

CHARLES M. JACOBS.

Parker, C. A.: Hollow-Foot: Pes Cavus. *J. Am. M. Ass.*, 1913, lxi, 1886.

By Surg., Gynec. & Obst.

The author states that an increase of the longitudinal arch is entirely normal in some cases, but that it may become so great as to cause serious disability; that pes cavus is essentially an increased concavity of the arch with a shortening of the structures of the foot, usually associated with dorsal retraction of the toes, which is not a part of the cavus, but bears an important relation to its development. That it is

usually associated with some other malposition of the foot, such as varus, valgus, equinus, or calcaneus.

As to its etiology, he states that so-called true or essential cavus is rare; that cavus is practically always of neurogenic origin, resulting from lesions of poliomyelitis, of the cerebral cortex, of toxic neuritis, the dystrophies. It also results from mechanical causes, as from a shortened limb; and from the disturbances of muscles, as in the interossei muscles; from short shoes; also from primary myositis of the tibialis anticus.

He then goes into the mechanism of cavus, and states that the normal arch is maintained by the shape and arrangement of the bones, the muscles, fascia, and ligaments; and that the rigidity of the bones maintains the general form of the foot in paralysis of the muscles, but that the ligaments and fascia only imperfectly perform their functions; and that disturbances of the function of muscle are responsible for the development of most deformities.

He states that the muscles of the sole, including the long flexors of the toes, increase concavity of the arch, while those on the dorsum decrease it; that the tendo Achilles is the strongest extensor, while the tibialis anticus is the opponent; that the extensors and flexors of the toes act only indirectly on the arch, but that this indirect action is of the utmost importance in controlling the stability of the arch; and that this interrelation of the flexors and extensors of the toes is so fundamentally important in preserving the normal condition of the arch that, if paralytic calcaneus and, possibly, congenital types are left out of consideration, he believes it safe to say that a perversion of the normal reciprocal action between the flexors and extensors of the toes can account for most, if not all, of the remaining types of cavus.

He explains this interrelation as follows: In rest with the normal foot, the balance is perfect with the toes neither in flexion nor extension. Active flexion or extension of the toes affects the flexible arch; dorsal extension increases the concavity, while plantar flexion decreases it. Normally, the change takes place by both muscle and bony adjustment. The centers of rotation of the metatarsophalangeal articulations are near the centers of the heads of the metatarsal bones, and the tendons pass over these centers to their attachments to the phalanges and

maintain the arch in its normal position, when the toes are straight ahead; but when the toes are extended, then the flexor tendons on the under side must be stretched in order to allow the toes to take the new position or the span of the arch must be diminished. The tendon does not stretch, but the muscle may relax — normally both take place.

Two sets of flexors, the short flexors in the sole and the long flexors passing behind the ankle, are concerned in this action; motion at the ankle somewhat affects the function of the latter. Extension of the foot slightly relaxes the long flexors and tends to weaken their effect in the interaction, but this is slight, as they pass so near their axis of rotation at the ankle that flexion or extension of the ankle makes very little difference in their ultimate action.

On the other hand, the dorsal extensors of the toe pass a greater distance in front of the axis of motion at the ankle and are markedly increased in their capacity to extend the toe by strong extension of the foot, and thus gain definite power over the flexors, that easily maintained their balance in the normal, or resting position of the foot. Similarly, the author shows the mechanism in decreasing the concavity of the arch.

In health, the various changes are physiological and the normal resting place is readily resumed, but under pathological conditions, the position cannot be assumed, or, if assumed, cannot be maintained. The disturbed action of the flexors and extensors is usually secondary in nature, the real affection being in the synergic muscles; the originally affected muscles primarily destroying the balance of the foot, and the physiological action of the flexors and extensors, under changed conditions, producing the deformities.

He then shows how paralysis of the tibialis anticus, with resultant foot-drop, and the accompanying overtension of the toes produce an increase of the concavity of the arch.

Under treatment he states that simple measures commonly suffice to restore balance in the initial stages; while, in the fixed deformity, great force, frequently accompanied by resection of bones and section of the soft tissues, is often necessary to restore, in a measure, the normal condition of the foot.

J. O. WALLACE.

SURGERY OF THE SPINAL COLUMN AND CORD

Golant, A. J.: Ankylosis of the Spinal Column (Über die Unbeweglichkeit der Wirbelsäule). *Dissertation*, St. Petersburg, 1913.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

After a critical review of the literature of the subject, the author gives very detailed case histories of 9 cases of ankylosis of the spinal column from Bechterew's Clinic and an exhaustive description of the symptomatology and diagnosis of the disease. Two of the cases died and he had an opportunity

to make a careful macroscopic and microscopic examination of the spinal column and the central nervous system, in his report he adds a description of fourteen museum preparations. In order to determine the changes which take place in the intervertebral cartilages as a result of age he made a microscopic examination of the spinal columns of 9 individuals from 1 to 89 years of age. He sums up the results of his investigations as follows:

1. With advancing years, changes take place in

the intervertebral cartilages which consist chiefly in a change of the peripheral zone of the hyaline cartilage into osteoid substance, in a relaxation of the fibers of the annulus fibrosus, and in a solidification of the nucleus gelatinosus.

2. In primary bony ankylosis of the spinal column the changes in the intervertebral cartilages are absolutely different from those caused by advancing age, and may be briefly designated as chondrodystrophic ankylosis of the vertebræ.

3. The changes in the ankylosed spinal column consist in the formation of bridges between the bodies of the adjoining vertebræ, in ankylosis of the small joints, and in ossification of the ligaments; sometimes there is also osteoporosis.

4. In the different segments of the same spinal column different forms of the above changes may be observed, which indicate that they are related in their pathologic-anatomy.

5. In some cases symptoms of affection of the central nervous system predominate. In these cases autopsy discloses chronic meningitis and degenerative changes of the spinal roots and of the substance of the spinal cord, which justifies the separation of these cases into a special group called Bechterew's disease.

6. The other forms of ankylosis of the spinal column described in the literature have not been subjected to a sufficiently careful pathologic-anatomical study to enable them to be differentiated. There are 26 illustrations in the work, and a bibliography of 221 titles.

RIESENKAMPFF.

Peltesohn, S.: Abbott's Treatment of Scoliosis
Über die Behandlung der Skoliosen nach Abbott).
Med. Klin., Berl., 1913, ix, 1451.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author gives a short review of the literature that has appeared on the subject up to this time, and a critical discussion of the principles, technique, and results of Abbott's method. An improvement in scoliosis can be brought about by a strong pull on the head (Wullstein), and other authors have previously recommended the overcorrection of this deformity. The chief new thing in Abbott's method is the overcorrection and fixation in the position of flexion of the spinal column, which is best suited for the overcoming of scoliosis.

A further important point is the auxiliary effect of breathing in the restoration of the form of the thorax, and the careful after-treatment. The thirty cases of scoliosis of the second and third degree treated with this method by Peltesohn have shown good results, but, on the whole, do not permit of a decisive judgment in regard to the value of the method.

The question must still be left open as to whether, as in Wullstein and Schanz's plaster-jacket treatment, there is only an improvement in the external form of the body, or whether there is a real anatomical restoration of the diseased part of the skeleton, and after how long a time such a restoration may be

expected. It is certain, however, that Abbott's method avoids the severe injury to the organism and the high grade atrophy of the muscles that follows the wearing of a plaster jacket for only a few months and the gymnastic after-treatment that is necessary to overcome it.

Strict indications for the method cannot be given as yet, but in the choice of cases there should be a good general condition and the absence of acute inflammation of bone. Scolioses of the second and third degree should be chosen, and those with a single round curve seem to lend themselves better to correction than those with short, double, angular curves. In general, Abbott's method must be regarded as a decisive improvement in the treatment of severe scoliosis.

DUNCKER.

Nutt, J. J.: Results of Bone Plastic and Graft Operations on the Spine, for the Cure of Pott's Disease. *J. Am. M. Ass.*, 1913, lxi, 1780.

By Surg., Gynec. & Obst.

Nutt has observed 15 cases of the above, at Sea Breeze Hospital, since November, 1912. There were 11 grafts from the tibia, and 4 plastics of the spines of the vertebræ—the results showing nothing to indicate preference for either operation. Temperature and weight curves were not affected, high temperatures continuing after the operation.

The cases are reported in some detail, and the results are tabulated. From the table it appears that the average age of the patients was from 2 to 6 years, 10 being under 4. The duration of the disease before operation was from 6 to 24 months in 10 cases, the time being unknown in 5 cases. At the time of operation, the cases were classed as follows: Acute, 2; fair, 3; excellent, 3; arrested, 4. The disease was, in all cases, either dorsal or dorsolumbar. External support was removed in from 45 days to nine months, except in two cases, in one of which no support was used, the other having continuous bed-treatment. Symptoms of insufficient protection appeared in one to six months in the 6 cases which presented definite symptoms of relapse, 7 had no return of symptoms, and in 2 cases it was a question whether the symptoms had been relieved at all. The deformity increased in 10 cases, including 4 classified as having no return of symptoms, muscular spasm being present in all cases showing symptoms.

Nutt concludes that the operation was beneficial in 3 cases; doubtful in 3; and of no benefit in 9; 8 cases being still under treatment, at a period of from 6 to 18 months after the report, these including some from each of the last mentioned groups. The author's conclusions are: (1) The claims for the operation have not been substantiated (referring to the report of the Sea Breeze Hospital). (2) Alterations in technique, such as implantation of longer graft and extension of the time of external support, may improve the results, but this could be determined only after two years' observation. (3) The danger from the operation is not the result of the operation itself, but the result of "creating a sense

of false security," and the "consequent neglect of other therapeutic measures," such as external support.

In the discussion of the paper the consensus of opinion was that these operations are still to be

considered as in the trial stage. Cotton reported some interesting results of experiments he has been doing in the use of spongy bone for grafts, his work seeming to show that they are superior to cortical bone for this purpose.

C. E. WELLS.

SURGERY OF THE NERVOUS SYSTEM

Leriche, R.: Stretching and Section of the Perivascular Nerves in Some Painful Syndromes of Arterial Origin, and in Some Trophic Disturbances (De l'élongation et de la section des nerfs périvasculaires dans certains syndromes douloureux d'origine artérielle et dans quelques troubles trophiques). *Lyon chir.*, 1913, x, 378.

By Journal de Chirurgie.

Stretching the solar plexus has failed in the treatment of the gastric crises of tabes, but Leriche believes that this procedure, devised by Jaboulay, should not be dropped from surgical treatment, and that there may be other indications for it in troubles of sympathetic origin.

He points out three possible indications, which are not, however, sanctional by general practice. They are as follows:

1. Intestinal syndromes of arterial origin, consisting in crises of pain around the umbilicus with general or partial distention of the intestine, absolute constipation, dyspnoea, crises of enteralgia and vasomotor diarrhoea, and certain forms of symptomatic enterocolitis accompanied by outbreaks of diarrhoea with bloody stools, may be improved by stretching the solar plexus and sectioning the sympathetic fibers which surround the superior mesenteric artery at the point where it crosses the third part of the duodenum.

2. In subacute inflammation of the arch of the aorta, the agonizing pain and the reflex disturbances, angina of the breast, vertigo, dyspnoea, and acute cedema of the lungs, are in large part due to inflammatory irritation of the nervous plexus around the aorta. By resection of the second and third costal cartilages the aorta may be laid bare at its point of departure from the pericardium and the plexus freed from its inflammatory adhesions.

3. There are indications for denudation of the large arterial trunks of the limbs in Raynaud's disease, and perhaps also in congenital trophic cedema, which Sicard and Laignel-Lavastine have attributed to a sympathetic origin; and it has been proved in stubborn perforating ulcers (Jaboulay, Viannay, Leriche).

The above are only suggestions and have not yet received the sanction of practice. They may, perhaps, appear somewhat dangerous, but they are logical. In a case of trophic cedema of the leg, Leriche performed denudation of the femoral artery in Scarpa's triangle; the operation caused a decrease of 2 cm. in the circumference of the leg, but the case was not followed up.

CH. LENORMANT.

Spisharnij, J. K.: Surgery of the Nerve Trunks (Zur Chirurgie der Nervenstämme). *Verhandl. d. XII Kong. russ. Chir.*, 1913, xii, 63.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author reports 27 cases, which are divided into two groups. The first group comprised 15 patients, on whom 18 operations were performed, consisting of nerve-anastomosis, nerve-suture, and neurolysis. In the cases of anastomosis the normal nerve accessory, hypoglossus, was implanted into a split in the paralyzed facial and the cut ends of the nerve were united by direct suture. If a large part of the nerve was removed, he attempted to restore it by stretching both stumps; in one case a resected piece 6 cm. long was compensated for in this way. Primary suture of nerves has no advantages over secondary, since the regeneration of the peripheral section does not take place till after about six months; though if the ends are not reunited within this time the regenerated fibers undergo degeneration again.

In order to guard the nerve, which has been sutured or freed from cicatricial tissue, from adhesions with the neighboring tissues, the author recommends making a sheath of fascia lata. In 60 per cent of his cases he obtained restoration of function or improvement, but in no case complete *restitutio ad integrum*. Restoration of conduction took place only after considerable time — as long as a year; and sensation was restored first, then motion. The best results were obtained in the radial nerve.

In the second group are nine cases of resection of nerve trunks, among them the three of nerve implantation already mentioned, in which complete functional restoration was accomplished. Five times nerve trunks had to be resected in extirpation of tumors. Resection of the vagus on one side, in 3 cases, did not cause any serious symptoms in heart or respiration, either during or after the operation. In severe cases of neuralgia of the second and third divisions of the trifacial nerves, he cut the roots of the gasserian ganglion, partially excised the latter, and removed the intracranial part of the second and third divisions. Besides accomplishing complete cure, this operation has the advantage of being less dangerous for the patient. Bleeding from the middle meningeal artery during the operation was avoided by cutting it at the foramen spinosum and stopping up the opening with a piece of bone. The same procedure can be used at the foramen ovale and the foramen rotundum to void regeneration of twigs of the trifacial.

STROMBERG.

DISEASES AND SURGERY OF THE SKIN AND APPENDAGES

Beck, S. C.: The Treatment of Burns (Über die Behandlung der Verbrennungen). *Therap. Monatsh.*, 1913, xxvii, 561.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Beck treats burn wounds with wet dressings of 1/3000 to 1/4000 potassium permanganate solution until suppuration has ceased. The dressings are saturated every half-hour with the solution and covered with some impermeable material. He advises a complete bath twice daily, using 3 to 4 gm. of potassium permanganate for a child's bath and twice that amount for an adult's. After the raw

surface is comparatively clear the exuberant granulations are kept down by means of caustics. The formation of epithelium is hastened by ointment dressing. For three to four days an 8 per cent amidoazotoluol salve is used, and then for one to two days a 10 per cent borvaseline is applied. These are used alternately until healing has taken place. For the relief of pain 5 per cent cycloform is added to the above ointments. In the treatment of hypertrophic scar tissue from burns and keloids, fibrolysin and CO₂ snow have been successfully employed.

WREDE.

MISCELLANEOUS

CLINICAL ENTITIES — TUMORS, ULCERS, ABSCESSSES, ETC.

Bloodgood, J. C.: Cancer Control. *Boston M. & S. J.*, 1913, clxix, 792. By Surg., Gynec. & Obst.

In the control of cancer, Bloodgood says there are two factors which may be controlled — the duration of the disease and the treatment. Long experience seems to show that many conditions, of themselves harmless, may become cancerous in course of time. These conditions are called precancerous by the author, and include benign tumors such as warts, nævi, or moles, ulcers which do not heal, and chronic inflammatory conditions. Many of these lesions should receive early and proper treatment in order that the best results may be obtained.

Treatment which is merely irritating is often worse than no treatment at all, and the author censures very severely the use of caustics, curetting, improper use of the X-rays and radium, and carbon dioxide snow. The use of the above methods is objected to by the author for two reasons, namely: (1) The removal may be incomplete; and (2) the failure to make a microscopical study of a section of the precancerous tissue, for, in some instances, cancer develops very rapidly and can be recognized only with the microscope.

The author cites statistics to show that when cancer is treated in the precancerous or early cancerous stage, with the complete removal of the part affected, nearly 100 per cent of the cases are cured. The longer the cases are allowed to run, the less likelihood there is of a cure, and the percentage of cures in these later cases falls with appalling rapidity.

J. H. SKILES.

Percy, J. F.: Inoperable Cancer; the Best Methods of Discouraging Its Activity; a Study of Heat in Cancer. *Tr. Western Surg. Ass.*, St. Louis, 1913, Dec. By Surg., Gynec. & Obst.

Percy's paper gives a brief résumé of the status of the treatment of carcinoma, discusses specifically the literature bearing upon the relation of heat to

cancer, and emphasizes the vulnerability of cancer to heat. He refers to the work of Vidal as important, showing that the use of various serums, toxins, and vaccines produces no results in the treatment of cancer if they fail, when administered, to raise the temperature. He therefore concludes that these various methods owe their success largely to their fever-producing qualities. The various reports of diminution of malignant tumors, following infections such as erysipelas, assume a new significance.

He describes his clinical and experimental researches in the application of heat in cancer; he shows, in experiments made on beef muscle, that a mass 3 x 3 x 3½ inches is entirely coagulated in 60 minutes. Based upon experimental data, the author states that it is logical that there may be hope for the eradication of cancerous growths by attacking these morbid processes through their vulnerability to heat. It therefore remains to develop a method of applying heat to the tumor mass to a degree of efficiency that will permit of the greatest destruction of carcinoma cells with a maximum conservation of normal tissue cells.

He mentions the various methods possibly useful in this connection, and, describing his own, speaks of it as a practical method for the application of heat in the treatment of carcinoma, and insists that it has none of the objections that can, with reason, be claimed against the various other methods enumerated in his paper. The penetration of heat by the author's method can be definitely determined and regulated, and its applicability has almost no limitations where the malignant process is at all accessible. The method consists of the application of heat from an electrocautery, accurately controlled by a rheostat, and applied to the affected tissue, as outlined in the author's two previous papers.

The point is made that heat, and not cauterization, is the object to be attained, and that cauterization is responsible for the early formation of a charcoal core, which interferes with the dissemina-

tion of heat and later prevents drainage from the treated area. Without drainage, there is danger from the absorption of large quantities of killed cancer-cells.

Maragliano, D.: Physiotherapy of Abdominal Shock (Fisioterapia dei traumi gastro-omentali).

Clin. chir., 1913, xxi, 1645.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author discusses in detail the new theories as to the cause of shock set forth by Preil, Tixier, Guinard, Buerger, Churchman, Howell, and others. They seem to be agreed that (1) shock is always accompanied by a fall in blood pressure and (2) this fall in blood pressure results from certain nerve reflexes which may be aroused by different forms of irritation. Maragliano performed a series of experiments on anesthetized dogs designed to clear up the mode of action of these reflexes. The carotid was connected with a Hering's kymograph, so that the effect of eventration of the stomach and different manipulations performed on this organ and the omentum were graphically recorded.

In a series of experiments performed on 5 dogs, anesthetized with chloroform only, pulling out or stretching the stomach caused a fall in blood pressure, a slowing of the pulse and an increase in its volume. These phenomena did not always occur at first but always occurred after the irritation was repeated three or four times. In the beginning of the experiment there was often a period of indifference. The peritoneal reflexes caused by mechanical stimulation may come through the sympathetic or the vagi. Von Tarchanoff, Crile and others think that the sympathetic is the chief agent in causing a fall in blood pressure. The vagus, on the other hand, causes changes in the heart's action. The author tried to determine the function of the vagus. In two animals he cut the vagi in the neck on both sides and after a time carried out the manipulations above described on the stomach. There was a fall in blood pressure but the heart's action was unchanged. This shows that the vagi determine pneumocardial shock. These reflexes are suppressed when either the end organs of the nerves or the nerve trunks are paralyzed. He injected novocaine into the stomach, omentum, and surrounding tissues. The results were not convincing; but when mixed anesthesia was used on dogs — chloroform and morphine, 2-5 mg. to a kilogram of body weight — there was often a marked rise in blood pressure, which was repeated with each fresh mechanical stimulation. The frequency and volume of the pulse did not show any further variation.

The morphine or pantopon should be given a half hour before the beginning of the experiment. If a bilateral section of the vagi is performed on animals so treated the fall in blood pressure and the changes in rhythm and quality of the pulse appear again. The alkaloids of opium used to precede chloroform anesthesia show a very favorable effect, which the author attributes to the avoidance of anesthetic

shock. He recommends, therefore, the avoidance of traumatic shock in operations, the giving of morphine before the operation, and suggests that after the operation the patient should be kept for two or three days in a condition of slight morphine stupor. He does not discuss the possible effect of this procedure on the lungs and intestines. Horz.

Stich, R.: Present Status of Transplantation of Organs (Über den heutigen Stand der Organtransplantationen). *Deutsche med. Wchnschr.*, 1913, xxix, 1865.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The most careful asepsis is an essential condition of success in the transplantation of organs by suture of the vessels. Carrel's method is the best. Arteries and veins which have undergone autoplasmic transplantation show under the microscope that the different layers are completely intact, while those that have been transplanted to different animals, and more especially those that have been transplanted to animals of different species, show almost without exception a replacement by the tissues of the body to which they were transplanted. Skin transplantations can be carried out successfully in animals that are close blood relations. Periosteum, bone marrow, fat, tendons, and cartilage have been transplanted between animals of the same species.

Autoplasmic transplantation has been successful with suprarenal glands, epithelial bodies, and ovaries. The longest time during which a kidney transplanted to an animal of the same species has continued to functionate has been three months. Reimplantation of thyroid glands has frequently succeeded with complete functional activity. The failures have been due to thrombosis of the thyroid veins. The suture of the veins is the decisive factor. If thrombosis takes place at once, the transplanted organ is lost; if it does not take place until later, parts of the thyroid may recover as a result of vascularization from the surrounding tissues.

All attempts at transplantation between man and animals have failed. Homoplasmic transplantation of the spleen has sometimes succeeded. Attempts to further the success of homoplasmic transplantation by serum injections from one animal to the other, by long continued living under the same conditions and with the same diet, and by even parabiotic union of the two animals by vessel suture, have failed.

WORTMANN.

Reschke, K.: Autoplasmic and Homoplasmic Transplantation (Die autoplastische und homio-plastische Transplantation). *Dissertation*, Berlin, 1913. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

In the author's experiments, pieces were removed from the stomach and bladder of dogs, and the mucous membrane was dissected off and attached to the outside of the stomach and bladder, in some cases with the mucous surface turned inward, in other cases outward. Twenty-six transplantations were done, 16 of them autoplasmic and 11 homoplas-

tic. The latter underwent necrosis, except for a part of the muscularis mucosa, and were surrounded and penetrated by granulation tissue so that they presented the picture of a connective-tissue callus.

The bladder mucous membrane, which does not have a muscularis mucosa, was all absorbed. In the autoplasic cases with the mucous side turned inward, cysts of various sizes were formed, and where it was turned outward there were omental adhesions, between which and the mucous membrane cysts were also formed. Both stomach and bladder mucous membrane lived and looked like normal tissue. Two of the cysts were examined, and in one of them pepsin was found, in the other free acid, which must have been secreted by the transplanted glands. Thus they found in homoplastic transplantation only a connective-tissue callus, while in the autoplasic transplantation there was living, proliferating, functioning tissue.

The differences between autoplasic and homoplastic transplantation were not the same with all tissues. In tendons there was no difference; in bone tissue it only developed gradually. Homoplastic transplantation of vessels gave good functional results in spite of the gradual absorption of the transplant and the substitution of connective-tissue for it. Homoplastic transplantation of fat had only slight results, in contrast with good results from the corresponding autoplasic transplantation. Homoplastic transplantation shows poor results in the skin, mucous membrane, and glandular organs, while transplantation of these tissues in the same individual generally produces excellent results.

FRITZ LOEB.

SERA, VACCINES, AND FERMENTS

Wolfsohn, G.: Serum Diagnosis of Cancer (Über Serodiagnostik des Carcinoms). *Arch. f. klin. Chir.*, 1913, cii, 247.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author discusses a number of the methods of serologic diagnosis of cancer, and especially the question of their utilization for clinical diagnosis. The hæmolytic reactions, the complement-fixation method, the allergic reactions, and the antitrypsin reaction cannot be used clinically because they are too uncertain in their results. Precipitation, coagulation, and agglutination cannot be used, for it is too difficult to get a uniform tumor extract that can be kept; however, the latter reactions may be regarded as specific in a biological sense. The meiotagmin reaction with lecithin-acetone extracts has thus far shown good results, though the material examined is relatively small. As this reaction is relatively easy to carry out it should be made use of in practice. Abderhalden's method of demonstrating specific protective ferments has probably the greatest future before it, as it is absolutely specific, both clinically and biologically, and gives dependable results even in the early stages of tumor formation.

STADLER.

BLOOD

Hanser, R.: Thrombosis (Zur Frage der Thrombose). *Virchow's Arch. f. path. Anat., etc.*, Berl., 1913, ccxiii, 65.
By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author gives a detailed study of the literature of thrombosis, and a considerable section of his article is devoted to the theories in regard to it. A thorough consideration is given also to the history, anatomy, physiology, origin, distribution, and number of the blood platelets. The chief part of the work is devoted to the question of thrombosis itself. Hanser reviews all the important theories and facts brought out by anatomical, clinical, and experimental research. His own experiments were devoted to the important question of the formation of thrombosis in circulating and in stagnant blood after corrosion of the vessel walls. Thrombus was always found in circulating blood, but except for the presence of very minute collections of blood platelets, it could never be found in stagnant blood. In conclusion a résumé is given of the chemical and physical conditions in the formation of thrombus and the author's opinion in regard to thrombus that he has drawn from his own experiments.

KLEINSCHMIDT.

Vaughan, J. W.: Direct Blood Transfusion. *J. Mich. St. M. Soc.*, 1913, xii, 582.

By Surg., Gynec. & Obst.

In this article but two phases of the subject are considered: the indications for direct transfusion and the method of choice. The chief indication for the use of whole blood are in conditions where the red cell is needed for its physiological action, as in severe hæmorrhage from any cause curable surgically; also after repeated small hæmorrhages in which the hæmoglobin index is low, as in gastric or duodenal ulcer or ulcer of the lower intestinal tract or rectum. In acute infections the addition of fresh blood would not seem to be of much benefit, except possibly in pneumonia, where the cause of death is seemingly closely related to the formation of methæmoglobin. Freshly introduced red cells thus might replace those which had lost their ability to supply sufficient oxygen to the tissues. In gas poisoning or other asphyxias the same indication is present. In these conditions the withdrawal of blood should be done before transfusion in order to rid the individual of non-functioning corpuscles as well as a percentage of the gases contained in the serum.

Attention is called to the fact that transfusion is often done when the administration of serum or of saline would answer the purpose, and that the operation is often done where there is no indication, thus bringing the method into disrepute.

In regard to the method of choice, the author believes the only way in which a satisfactory vein-to-vein anastomosis can be obtained is by the use of a method in which a positive pressure under control of the operator can be applied to force the blood into the vein of the recipient. The apparatus

devised by Freund, based on the principle first used by Vaughan and Cooley, is described and illustrated. It consists of two needles connected to a glass syringe by means of a two-way stop-cock. Above the stop-cock is a saline container for diluting the blood. With this apparatus, positive pressure can be applied, and the amount of blood given the recipient measured with certainty. Its use requires no anæsthetic, and it can be performed by any competent practitioner.

E. K. ARMSTRONG.

Kimpton, A. R.: Transfusion by Means of Glass Cylinders. *Boston M. & S. J.*, 1913, clxix, 783. By Surg., Gynec. & Obst.

The method of the author is comparatively simple and consists in the withdrawal of a definite amount of blood from a vein of the donor and the injection of the blood through the same cannula used for its withdrawal into the vein of the recipient. The vessel into which the blood is drawn is a glass cylinder completely coated with paraffin.

The glass cylinder may be of any size desired, but the author has found two sizes, 150 ccm. and 250 ccm., to be the most useful. The top of the cylinder is closed with a cork, and a short distance from the top a side-tube leads from the cylinder. This side-tube is used to attach an ordinary cautery bulb to when the blood is being forced into the vein of the patient. The lower end of the cylinder is drawn out and a cannula is attached to the drawn-out end. The entire apparatus is sterilized and completely coated with an oily mixture of vaseline 2, paraffin 2, and stearin 1.

The technique of the procedure is as follows: A tourniquet is placed on the donor's arm, tight enough to give venous congestion and still allow arterial blood to flow in. With novocaine a vein just below the elbow is exposed cleanly and tied proximally; a ligature is placed around it, distally, but is not tied. This ligature, raised by an assistant, acts as a clamp. The vein is now transfixed by a cataract knife and a slit is made. A similar vein of the recipient is prepared in like manner, except that it is tied distally.

The cannula of the cylinder is then inserted into the vein of the donor and held upright until filled by venous pressure. It usually takes only two to three minutes for a 250 ccm. tube to fill. Being filled, the cannula is withdrawn and held on its side, with side-piece uppermost to prevent the blood from running out. The cannula is next inserted into the vein of the recipient and held in an upright position, after which a cautery bulb pump is attached to the side-tube, and by a little pressure the blood is emptied, the cannula being withdrawn while there is still a little blood left in it.

The method has, to the author's knowledge, been used fifteen times, either by himself or others, without difficulty except in two cases. In these there were errors of technique, and when they were corrected the patients were easily transfused.

Among the dangers of the method, acute dilatation of the heart is the most important, manifesting

itself by precordial distress, dyspnoea, and rapidity of pulse. Stopping the flow by pressure of a finger on the vein will usually overcome this complication.

The method has the following advantages: (1) The technique is comparatively simple; (2) a trained assistant is not essential; and (3) the amount of blood transfused can be definitely measured.

J. H. SKILES.

POISONS

Haines, W. D.: Gas Bacillus Infection; with Report of Cases. *Tr. Western Surg. Ass.*, St. Louis, 1913, Dec. By Surg., Gynec. & Obst.

Haines spoke of the high mortality of this type of infection and the importance of early recognition and prompt action, and referred to the "foamy liver" as one of the constant post-mortem findings.

The intestinal tract is one of the normal habitats of the gas bacillus, and invasion of the adjacent cellular structures may take place through ulcer, malignant disease, or perforation.

A case is cited wherein an enormous abdominal distention from gas bacillus was mistaken for post-operative dilatation of the stomach.

The disease appears as a local phlegmonous inflammation characterized by extensive exudate and the presence of hydrogen gas in the tissue spaces. Pressure gangrene and profound general toxæmia are frequently associated with these clinical manifestations. The period of incubation in one of the cases reported was 48 hours; in the second case it could not be determined.

The bacillus *aërogenes capsulatus* is *aërobic*, therefore success in the treatment will depend more upon free exposure of the infected area than upon any form of local or internal medication.

The report of two cases, one of infection of the scrotum and the other of the arm, wherein recovery followed free incision, concludes this interesting paper.

Cumberbatch, E. P.: Fatal Leukopenia Following X-Ray Treatment. *Arch. Röntg. Ray.*, 1913, xviii, 187. By Surg., Gynec. & Obst.

In his opening remarks the author says, "The actual number of leucocytes at any one time does not seem to be a sufficient guide to decide whether the irradiation should be continued or not." The case reported is that of a house servant, aged 32 years, who had been ill six months when she entered the hospital. Examination showed: Leucocyte count 691,000 per cmm.; spleen enlarged; diagnosis splenomedullary leukæmia. Arsenic was given for a few days, then arsenic and X-ray treatment together during the 28 days she remained in the hospital. She returned for X-ray treatment as an out-patient after her discharge. The red bone marrow was treated with unfiltered irradiations, no portion receiving more than one Sabouraud pastille dose (tint B) each month. The spleen received a filtered ray to protect the overlying skin since the latter was irradiated more frequently than the skin over the bones. During the first sixteen days a total dose of $7\frac{1}{2}$ pastilles

was administered, the leucocyte count fell to 238,000 per cmm., and the patient lost weight. The dose was reduced to one pastille each six days. The patient regained weight and improved rapidly. At the end of 111 days, leucocytes had fallen to 4,000 per cubic millimetre and the spleen could just be felt under the left costal arch. Treatment was suspended.

Thirty-seven days later, the weight had increased seven pounds, and the blood contained 6,300 leucocytes per cmm., 693 of these being myelocytes. Twelve days after this examination, the spleen having enlarged, a pastille dose of X-ray was administered to this organ. In three weeks the patient returned, complaining of shortness of breath and a sore throat. She had lost color, her tonsils and pharynx were inflamed, and ulceration and granulation had appeared on the palate and uvula. Blood examination showed profound anaemia of the pernicious type, number of leucocytes 850 per cmm., 238 of these being myelocytes. Eleven days later she died.

The author compares this case with three others treated in a similar manner with beneficial results, his conclusion being that "in the fatal case the terminal leukopenia may have been the result of the heavier dosage causing the disappearance of the normal leucocytes more rapidly than the myelocytes."

FRANCES C. TURLEY.

Bondy, O.: Bactericidal Effect of Mesothorium (Versuche über die bactericide Wirkung des Mesothorium). *Zentralbl. f. Gynäk.*, 1913, xxxvii, 1142.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The quick cessation of putrefaction in carcinoma-tous ulcers, after treatment with radioactive substances, caused Bondy to make an effort to determine whether it was due to a bactericidal effect of the radiant material, or whether it caused an alteration in the tissues of such a nature that they no longer offered a favorable soil for the growth of the bacteria. It is known that the radium rays have a bactericidal effect. Bondy used, as material, two mesothorium capsules, a flat mica capsule with 5 mg. of mesothorium, and a silver tube with 30 mg. The results were that the unfiltered rays caused a cessation or diminution of the growth in colonies of prodigious and staphylococcus; but they had no effect on streptococci and tetani. The filtered rays had no effect. The α rays and a part of the β rays are bactericidal, the γ rays are not. As it is chiefly γ rays that are used in the treatment of carcinoma, the author believes that the effect of mesothorium on suppuration in carcinoma is due to an alteration in the tissues.

BORELL.

MILITARY AND NAVAL SURGERY

Wideröe, S.: Military Surgery (Kriegschirurgische Mitteilungen). Kristiania: Norli, 1913.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

These contributions are from the First Reserve Hospital in Belgrade, where the author had a chance to treat 657 wounded, from October 26 to December 15, 1912. He emphasizes the importance of the first-aid equipment, as well as the necessity of instructing the soldiers themselves in its use. Further, he mentions the importance of most careful transportation. The majority of the patients, upon entrance to the hospital, wore their first bandage. A list of the new arrivals was made at once as regards diagnosis, treatment, diet, and course. This list always accompanied the patients when they were transferred to another hospital, and was found to be very practical. Wound treatment consisted of asepsis and dry treatment. Tamponing, sounding, or extracting of bullets was used only with special indications. Chafed feet did not occur, and the soldiers used their own footwear, soft shoes without heels laced above the ankle. In 90 per cent of all cases the wounds were aseptic, and of the cases treated by the author 60 per cent were ready for service after a few weeks. This depended in the first instance upon the small caliber of the bullets, their great initial velocity, and hardness, as well as the correspondingly slight injurious action.

Of complications arising in the course of the wounds may be mentioned: erysipelas, 1; tetanus, 1; pulmonary embolism, 1; paralysis of a nerve, 5; aneurism, 2. Fractures of the upper extremities were the most frequent, especially of the humerus, 9 cases noted; others numbered 16 fractures. Of 66 bullets without exit, 52 were extracted; 14 patients were discharged without removal of the missiles. The bullets, as a rule, were not removed through the track of the bullet. Of 657 wounded, 77 were severely injured, 11.7 per cent; of these 29, 4.4 per cent, were declared unfit for service. The infection of the gunshot wound varied in the various Belgrade hospitals from 5 to 50 per cent, depending on the nature of the lesions. In the First Reserve Hospital there were 520 gunshot lesions, with 6 cases of lymphangitis and 24 abscesses, or 6 per cent clinical infections. The predominant part of the gunshot lesions occurred in the right arm and right shoulder. The author finally reports a few special lesions in detail. There were 22 gunshot wounds of the lung which healed without complications.

NILSEN.

GYNECOLOGY

UTERUS

Liegner, B.: Histology of Carcinoma of the Cervix (Zur Histologie des Carcinoma cervicis uteri). *Beitr. z. Geburtsh. u. Gynäk.*, 1913, xviii, 329.
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Liegner reports thirty cases of carcinomata of the uterus removed by operation and describes, in detail, the histological findings in the individual cases. He did not confine his examination to the uterus itself, but also examined parts of the parametrium, the vagina, and the regional lymph glands. In the summary of his findings he calls attention to the fact that the individual carcinomata show marked differences as to form of cells, structure, and growth, so that no two are alike. A point of practical value is that the macroscopic and microscopic findings do not agree; often a carcinoma is much farther advanced than its gross appearance would indicate, and on the other hand the parametrium is often shown by the microscope to be free from carcinoma, though, from its appearance, it would seem to be infiltrated beyond question. For this reason he invariably advises abdominal operation for uterine carcinoma. It is at present not possible to draw any conclusion as to the relative malignancy of the carcinomata from the histological pictures.

O. MEYER.

Wertheim: Cancer of the Uterus (Le cancer de l'utérus). *Ann. de gynec. et d'obst.*, 1913, xl, 302.

By Journal de Chirurgie.

This résumé of Wertheim's paper before the London Congress shows that his technique has changed little since his previous communications. He still practices extensive hysterectomy from above downward with section of the vagina last. The dressing of pre-operative vaginal infections, instead of being done with gauze soaked in bichloride, is now done with a 5 per cent solution of nitrate of silver, to avoid bichloride poisoning, which is rare but possible. Total closure above is made and drainage provided through the vagina. This drainage is not responsible for fistulae of the urethra. They occur in 6 per cent of cases, according to the author's latest statistics.

In spite of general development and progress, 50 per cent of the cases of uterine cancer are inoperable. The operative mortality in the latest statistics of 714 cases is 16.6 per cent. At the end of five years there were 42.5 per cent of permanent cures.

Cancer of the body of the uterus is less frequent, and the author cannot give extensive statistics in regard to it but contents himself with defending the abdominal operation, and claims it may be a simple or radical hysterectomy, according to the case and the extent of the lesions.

L. CHEVRIER.

Rubin, I. C.: The Early Diagnosis of Uterine Cancer: with Especial Reference to Diagnostic Excision of Cervical Lesions, Diagnostic Curettage, and the Routine Microscopy of Curettings. *Am. J. Surg.*, 1913, xxvii, 411.

By Surg., Gynec. & Obst.

The object of this paper is to present the difficulties attendant on our efforts to establish an early diagnosis of cancer of the uterus and to emphasize the value of the diagnostical surgical methods which can be relied upon to accomplish this end. The innumerable difficulties associated with a correct diagnosis must be considered from the viewpoint of the patient and from that of the physician. The very energetic movement now on foot in this country to instruct women in the recognition of the signs of uterine cancer is timely and necessary, but it must be noted that a similar movement, started abroad, has failed, and thus it is clear that little dependence may be placed upon the patient. Something may be hoped from warning the public, but it is plain from the nature of the disease, its insidiousness, and the fact that it has taken deep root before the patient becomes aware of its presence, that one can expect very little aid from the patient in the detection of early carcinoma. The means of detecting it lie solely in the hands of the medical profession, and this excellent paper reviews the methods by which an early and correct diagnosis may be reached.

Cancer spreads in the uterus in three ways, according to Schottlaender: (1) The common endophytic type, extending toward the parenchyma of the uterus; (2) the exophytic type, spreading toward the uterine or vaginal canal; and (3) extension along the surface mucosa. Usually these ways of propagating are combined, one type of extension being more prominent than the other. Histologically, the manner of extension is by direct contiguity of cells or by lymphatic extension. Clinically, the exophytic variety is easier to diagnose, owing to its tendency to appear where it may be seen and to its earlier tendency to ulceration, and is, therefore, the less malignant of the two. The endophytic variety with the same intensity of symptoms usually shows a greater tumor growth. The symptomatology of cancer of the uterus varies according to its actual size and the tissue invasion. The solid variety causes far earlier symptoms than the glandular, and the medullary earlier than the scirrhus.

The two means of diagnosing early cancer growths are emphasized, also careful routine clinical and pathological examinations. The first should include bimanual palpation, vaginal-cervical inspection, introduction of the uterine sound, unless contra-indicated, and if suspicion of cancer is thus aroused, diagnostic curettage or excision of the cervix, or

both. The routine pathological examination of uteri removed for any cause may bring to light clinically unsuspected carcinomata. Schottlaender found cancer in 2 per cent of uteri removed for various reasons, and the author reports several cases of the same nature. Particularly during the fourth decade of life should the importance of diagnostic curettage and excision be urged, while all curettages performed for the purpose of stopping bleeding should be regarded as diagnostic curettages. All circumscribed erosions with a tendency to bleed or which overlie indurated parenchyma should be excised. Of 64 diagnostic curettages for suspected uterine cancer, the preoperative diagnosis was correct in 45.3 per cent; and in 106 exploratory incisions of the cervix for the same reason, the diagnosis had been correctly made in 46.3 per cent of cases. In view of the fact that primary corpus cancer is to that of the cervix as 1 to 14, the cervix mucosa should unfailingly be curetted.

Early cervical carcinoma must be differentiated from: (1) Simple follicular erosions, cystic and hypertrophic; (2) small polypi; (3) syphilis; (4) tuberculosis; (5) decubitus ulcer; (6) protruding submucous myoma.

The criteria for the microscopical diagnosis of young carcinomata are: (1) Well-marked atypical condition of the epithelium, which is converted from a single cylindrical to a metaplastic many-layered variety; (2) well-marked difference in the size of individual cells in shape, arrangement, and chromatin content; (3) the presence of atypical mitosis; (4) the presence of giant-cells or giant-nuclei.

While it is not always easy to decide between various types of metaplastic epithelium, as to their benign or malignant significance, nevertheless, when these four conditions enumerated above are present in any given abnormal epithelium, it is safe to assume that malignancy has its inception there. At present, when metaplastic epithelium with morphological characteristics is found, it is safest to remove the uterus in a radical manner. To wait for typical clinical evidence or characteristic signs of a full-fledged growth, is to take away the principal opportunity for a cure, for, as Brunot has shown, there is invasion beyond the uterus as early as four weeks after the symptoms appear.

E. K. ARMSTRONG.

Berkeley, C., and Bonney, V.: Results of the Radical Operation for Carcinoma of the Cervix Uteri. *J. Obst. & Gynec. Brit. Emp.*, xxiv, 1913, 145.
By Surg., Gynec. & Obst.

The authors present the results of 71 operations, more especially with regard to the prolongation of life than to the definite cure. In the main, Wertheim's technique has been employed, with systematic removal of the glands in the parametric tissue, the obturator fossa, and along the iliac vessels. These 71 operations, chosen from 112 patients, show an operability rate of 63 per cent, representing

the limit of what can be performed on cases of the type coming under observation, only refusing or desisting from operation when the growth has gravely involved the bladder, both ureters, or the rectum.

Glandular metastases were found in 38.8 per cent. The operative mortality works out at 22.5 per cent. In 23 cases, recurrence took place, although 3 of these patients are alive, four years or longer after the operation. The results are thus tabulated:

Cases presented for treatment.....	112
Cases operated upon.....	71
Died as result of the operation.....	16
Died of recurrence.....	20
Died of intercurrent disease.....	2
Disappeared.....	2
Alive, with recurrence.....	3
Alive and well.....	28

The authors estimate their ideal late result at 54.9 per cent, the actual late result at 40.5 per cent, and the actual accomplishment, based on Winter's second formula, at 25.9 per cent. While these results do not enable the authors to claim a large number of cures, the life-prolonging effects of the operation on those surviving it seems to be substantiated.

CAREY CULBERTSON.

Caraven, J., and Merle, P.: Diffuse Adenoma of the Cornea of the Uterus (L'adénome diffus des cornes utérines). *Rev. de gynéc. et de chir. abdom.*, 1913, xxxi, 307.
By Journal de Chirurgie.

The authors report the case of a woman of 32 who had always had painful menstruation and who had had a profuse hæmorrhage. Laparotomy showed a small hæmatoma and bilateral hæmatosalpinx. The tubes and uterus were removed.

Examination of the specimen showed on the left side a hæmatosalpinx containing chorionic villi; on the right, a hydrohæmatosalpinx without any villi.

At the angles of the uterus there were a large number of irregularly shaped cysts of varying sizes, some almost microscopical and some as large as a grain of wheat, forming all together a small diffuse tumor that could not be enucleated. These cysts were filled with blood and lined with cylindrical epithelium, which had vibratile cilia in some places. The muscular tissue was not hypertrophied, but was covered directly by the epithelium without any connective tissue intervening.

The essential point about the tumor was the epithelial proliferation. This is true in the most of the cases collected by the authors. Therefore, they think the term adenoma is preferable to that of adenomyoma used by numerous authors.

Tumors of the angles of the uterus have been studied by Chiari, Schauta, Barabau, Pilliet and especially Recklinghausen in 1896. The first extensive work on the question in France was that of Jayle and Cohn, in 1901. These adenomata are located at the point of entrance of the tube into the

uterus; they are often bilateral (15 out of 19 of Recklinghausen's cases), which is an argument in favor of their congenital origin. They are small tumors, rarely larger than a hazel-nut, diffuse, non-capsulated, not capable of enucleation. Sometimes there is an unusual cystic development, forming a cystadenoma. Sometimes the blood-vessels, which are normally not abundant, become very numerous; then we have a telangiectatic adenoma, which is rare. Sometimes the cystic cavities are grouped in such a way as to resemble the arrangement of the tubes in the wolffian body. Almost always lesions of the adnexa coexist with them, such as cysts of the parovarium, chronic fibrous salpingitis, tubo-ovarian cysts, adenoma of the tubes, hæmatosalpinx, tubal pregnancy, etc.

The pathogenesis of these tumors is generally obscure. Some of them without doubt originate from the wolffian body—those that have the arrangement of the cysts mentioned above; some from Gaertner's duct; and some from cysts of the parovarium. The cavities of the adenoma sometimes communicate with those of this structure. But often such evidences of their origin do not exist. Some authors say they are derived from adenomata of Müller's duct. Ferroni has reported two cases in the course of tubal pregnancy where there was a decidual reaction between the epithelial lining of the glandular cavities and the muscle lying beneath it. In some cases an inflammatory origin is very probable. There is proliferation of the mucous membrane of the tube, prolongations of which extend between the muscles.

Caraven and Merle think their case was of tubal origin, but not inflammatory. Adenomata of the angles of the uterus have not been diagnosed clinically; only the coexisting lesions of the adnexa have been diagnosed. The prognosis is grave, for they predispose to hydrosalpinx and hæmatosalpinx and also to extra-uterine pregnancy.

The treatment consists in the removal of the diseased adnexa and resection of the oedematous angle of the uterus. If the lesion is bilateral, hysterectomy with total extirpation of the adnexa should be performed.

GEORGES LABEY.

Boni, A.: Infiltrating Hydatidiform Mole (Mole vésiculaire infiltrante). *Ann. d. ostet.*, 1913, No. 8, 306.
By *Journal de Chirurgie*.

A woman of 23 had had two normal deliveries at term. In 1912 a large hydatidiform mole was discharged. She was curetted and no vesicles found. A second curettage was performed a few days later and showed nothing abnormal in the uterine cavity. For two months the patient was well, but at the end of that time she had another profuse hæmorrhage which lasted several days. A third curettage was done and several vesicles obtained. It was not thought advisable to perform a radical operation because of the extremely anæmic condition of the patient. She had a high fever for several days and

then improved somewhat. On examination the uterus was found to have increased noticeably in size. After vaginal hysterectomy was performed the patient made an uneventful recovery.

The uterus was normal in form and about the size it would be in a one month's pregnancy. The mole was soft and pale in color and in the left cornu of the uterine cavity there was a small irregular mass sprinkled with little vesicles filled with fluid. A little above the internal os there was also a little growth, bluish red in color; aside from this, the mucous membrane seemed normal everywhere else. On section of the body of the uterus the mass was found to extend about to the middle of the muscle.

Microscopic examination of a fragment showed that the muscle fibers were separated to a considerable depth by little molar vesicles. These vesicles were isolated in places, grouped in small masses, which were separated from one another by extravasated blood or fibrin. They were made up of a vacuolated stroma, often undergoing necrosis and covered superficially with a tolerably regular epithelium. In places the spaces containing the vesicles were lined with endothelium, showing that they were vascular cavities. Around the vessels the muscle was discretely infiltrated with migratory syncytial cells.

The little tumor just above the internal os was also made up of a collection of molar vesicles. Around it the muscle was infiltrated with large syncytial masses, the nuclei of which, in the majority of cases, showed retrograde changes.

The tubes were normal. The ovaries contained some little follicular cysts, but there was no appreciable hyperplasia of the lutein cells.

This was, therefore, a typical case of infiltrating hydatidiform mole; it was, however, probably benign. The vesicles were shown by histological examination to be contained in the uterine vessels; the infiltration of the muscles by migratory syncytial cells was discrete, resembling that which is observed in normal pregnancy. The nuclei of these elements did not show any karyokinetic figures; on the contrary they were undergoing degeneration. When the patient was seen again she was found free from any malignant recurrence.

It is strange, in view of the findings in the uterus, that the two curettements after the expulsion of the mole did not reveal any suspicious fragments. The author concludes, therefore, that the vesicles, which at that time were buried in the uterine muscle, later proliferated so that they appeared superficially in the cavity of the uterus.

XAVIER BENDER.

Raab, H.: Differential Diagnosis of Myoma, Rich in Cells, and Myosarcoma of the Uterus (Zellreiche Myome und Myosarkome des Uterus). *Arch. f. Gynäk.*, 1913, c. 389.

By *Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.*

To make a certain diagnosis as to the malignancy of myoma from histological examination the following points should be taken into consideration:

(1) Structure of the muscular tissue and its richness in cells; (2) changes in the nuclei; (3) division of the nuclei; (4) content of intercellular fibrils (hyaline); (5) giant-cells; (6) boundaries of the tumor.

Other important points are that:

1. Rich cell content and limited development of connective tissue cannot settle the diagnosis of myosarcoma, since ordinary myomata, rich in cells, may show the same condition.

2. The nucleus in myosarcoma does not show any decided change in form in contrast to that of ordinary myoma.

3. The mere presence of division of nuclei cannot be taken as decisive. It is decisive only if abundant, and examination should be directed chiefly to the youngest parts of the tumor that have not yet undergone regressive metamorphosis.

4. Hyaline degeneration is more likely to take place in myomata and is perhaps to be regarded as a cicatricial process.

5. Giant-cells have a special value in the diagnosis of malignancy. They may appear very rarely in benign myomata, but if found, they are isolated. They appear in great numbers in myosarcoma and with especial abundance in the boundaries of the hyaline masses.

6. Benign tumors show sharply circumscribed boundaries. Myosarcomata do not show a real infiltrating proliferation but a penetration into the lymph-vessels.

KÖHLER.

Dartigues, L.: Technique of Anterior Colpotomy for Fibromyomectomy (Technique opératoire de la fibromyectomie transvaginale conservatrice par colpotomie antérieure). *Gaz. d. Hôp.*, 1913, lxxxvi, 1557. By Journal de Chirurgie.

This conservative operation consists in removing small subperitoneal sessile or pediculated fibroids from the anterior surface of the uterus by the vaginal route, passing through the anterior cul-de-sac of the vagina. According to whether one does or does not open the peritoneum it is called fibromyomectomy by simple or extraperitoneal colpotomy, or fibromyomectomy by transperitoneal or vesico-uterine colpotomy, or anterior colpocœliotomy.

After having pulled down the neck of the uterus with two Museux's forceps, and inserted a Hegar's metallic bougie in the ureter, a transverse, semi-circular incision is made on the anterior face of the uterus, a little prolonged toward the sides, so that there is an opening of $3\frac{1}{2}$ to $4\frac{1}{2}$ cm. As in vaginal hysterectomy, the bladder and the ureters are dissected with the fingers.

At this point a small parietal or pediculated anterior fibroid of the cervix may be removed without opening the peritoneum; this is called fibromyomectomy by extraperitoneal or subperitoneal enucleation.

As soon as the small fibroid comes into view, it is caught with a pair of forceps and removed very easily with the aid of the closed point of a pair of curved blunt scissors. If it is a subperitoneal inter-

uterovesical tumor of considerable size it is well to break it up into two or three fragments.

The fibroid removed, the place from which it was removed and the edges of the colpotomy wound should be sutured, or the site of the fibroid and the anterior cul-de-sac of the vagina may be merely tamponed with a gauze pad.

If there is a probability of the peritoneum having been opened and the wound bleeds, the wound should be opened and if necessary drained in order to avoid an effusion of blood in the peritoneum.

If there are fibroids higher up on the anterior surface or on the body of the uterus the peritoneum should be opened at the vesico-uterine cul-de-sac.

If possible the uterus may be drawn forward through the colpotomy wound, but this will not always be possible by any means. If not, a long speculum is introduced through the colpotomy wound, which reaches into the peritoneal cavity and pushes the bladder up, through which opening the fibroid can be seen and felt.

The fibroid is then seized with a pair of forceps; if it had a peduncle this is ligated and cut; it is then called abdominal polypectomy by anterior colpotomy. If it is sessile the uterus is incised with a bistoury, the capsule opened, and the tumor enucleated. It is then called an abdominal myoma-enucleation by anterior colpotomy. In this case the site of enucleation is sutured, the uterus replaced, the peritoneum sutured, and the vaginal wound repaired.

To facilitate the suturing of the site of enucleation, the edges may be seized with small forceps, which enables the needle to be passed more easily, and prevents the retraction of the uterus.

This operation may be combined with other supplementary ones, for example with a curettage, a plastic operation, or even, as in a case of Lejars', with a unilateral removal of the adnexa.

It can be seen that this operation is very different from median anterior hysterectomy, in which the uterus is opened into the cavity to a greater or less height.

To be sure it only permits of the removal of very small fibroids, as large as a nut, or an apricot at the most. But it has the advantage of preserving the patient's uterus and adnexa with menstruation and the possibility of pregnancy, and it prevents the opening of the abdomen, which is another feature in its favor.

J. DUMONT.

Schottlaender, J.: The Histological Diagnosis of Neoplasms of the Uterus (Über histologische Geschwulstdiagnostik im Bereiche der Gebärmutter). *Arch. f. Gynäk.*, 1913, c, 225.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Lubarsch deems the diagnosis of "cancer" in epithelial new-growths justifiable, only if a destructive growth can be demonstrated with certainty, while the malignancy in sarcoma is determined by the character of the cells. The author emphasizes the contradiction contained in this sentence and

states that the malignancy of epithelial new formations can, in most cases, be determined by the character of the cells alone, without proof of or regard to a destructive growth. He does not contradict the warning, contained in the paper of Lubarsch, against deductions, free from any objections and from faulty histological findings, but emphasizes that the requirements which Lubarsch places on the histological examination are too far-reaching and would considerably decrease the value of the diagnostic curettage and diagnostic excision.

E. VON GRAFF.

Lenormant, C.: Association of Rectal with Uterovaginal Prolapse (L'association du prolapsus rectal et du prolapsus utéro-vaginal). *Gynécologie*, 1913, xvii, 321. By *Journal de Chirurgie*.

The association of these two forms of prolapse is merely a coincidence. Rectal prolapse is as rare in women as genital prolapse is frequent.

This coexistence is explained by common factors which favor the development of both, such as deficiency in the pelvic floor, extreme depth of the cul-de-sac, retroversion of the uterus, and frequent and difficult labor. These causes, however, are not indispensable, because we have rectal prolapse in men, and the causes are not sufficient of themselves, since rectal prolapse is rare in women, though the perineum is often defective. Something more is necessary to explain these cases. Quénu holds that both rectal and genital prolapse are true perineal hernias, the sac being composed of the vagina or rectum as the case may be, the pressure of the viscera falling on the anterior wall of the rectum or on the retroverted uterus. But the sphincter of the rectum is generally intact, so this weight meets the resistance offered by the muscular column of the anus. Its maximum force, therefore, falls on the rectovaginal septum and causes rectocele, which is a stage of rectal prolapse. Another important factor, he thinks, is the congenitally abnormal length of the mesocolon.

The treatment for serious cases of either form of prolapse in women is hysterocolpexy. The hysterocolpexy should be done directly, rather than by means of the round ligaments. The colpexy should be done in the iliac fossa, by vertical fixation to the psoas after incision of the peritoneum; in the pelvis, by transverse suture to the posterior surface of the uterus and broad ligaments. The operation should always be completed by repair of the perineum, contraction of the anal canal, and reconstruction of the sphincter.

L. CHEVRIER.

Boije: The Surgical Treatment of Genital Prolapse, and Its Results (Über die operative Behandlung von Genitalprolaps mit besonderer Rücksicht auf die Resultate). *Versamml. d. Nord. chir. Vereins*, Kopenh., 1913.

By *Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.*

Boije is of the opinion that a vaginal plastic operation does not give a sufficient guarantee of a good

result in complete or almost complete prolapse, especially if a severe atrophy of the tissues of the pelvic floor be present. It must be combined with a firm ventrofixation of the uterus. This procedure should not be used, however, in young women who might afterwards become pregnant. The high amputation of the cervix is important in the vaginal plastic operation, because thereby scars are formed in the pericervical tissues which assist in fixing the uterus—disturbances did not occur during labor after this procedure. Care must be taken that the bladder be pushed far up. Broad and deep scars are formed in the parametria during the process of healing of the lateral vaginal walls.

Of seventy-five cases which were re-examined, the uterus loosened and prolapsed in one case only, after the patient had passed through three labors following the operation; cystoceles and rectoceles were found in six cases, or eight per cent; insignificant ventral hernias in seven cases; all the patients were subjectively well.

S. A. GAMMELTOFT.

Meyer, L.: The Surgical Treatment of Genital Prolapse; and Its Results (Über die operative Behandlung von Genitalprolaps mit besonderer Rücksicht auf die Resultate). *Versamml. d. Nord. chir. Vereins*, Kopenh., 1913.

By *Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.*

Meyer strongly opposes Halban's and Tandler's views that prolapsus is a hernia. A prolapse operation is not a herniotomy. He attaches great importance to the retrodeviations, as they are frequently the cause of the subjective sensations of weight and pressure, which the patients describe as a sensation of falling out. According to Meyer, an extensive anterior colporrhaphy and high cervical amputation increase the danger of retrodeviation. It is chiefly on account of this possibility that the antefixation operations deserve consideration in prolapse. Without doubt, ventrofixation is dangerous for women who become pregnant. It is not only unnecessary but even hazardous to isolate the levator muscles in the posterior colporrhaphy.

S. A. GAMMELTOFT.

Crossen, H. S.: The Conservative Operative Treatment of Long-Standing Inversion of the Uterus. *Tr. Western Surg. Ass.*, St. Louis, 1913, Dec. By *Surg., Gynec. & Obst.*

The article is a plea for the more general employment of operative measures which restore the inverted uterus to a functioning organ, in contradistinction to measures which sacrifice the uterus. There is given a brief review of the growth of conservative operative treatment for chronic inversion, a résumé and comparison of the operations, a report of a case in which the Spinelli method was employed, and a presentation of the technique and advantages of the method.

The conservative operative methods are:

1. Multiple incisions into the constricting cervical ring (Aran, Sims, Barnes, 1861).
2. Dilatation of the constriction ring, by a dilator

introduced through an abdominal incision (Thomas, 1869; with incisions, Everke, 1899).

3. Dilatation of the constriction ring, by a dilator introduced through an incision in the fundus uteri (Browne, 1883).

4. Division of the constriction ring and adjacent uterine wall and the cervix, posteriorly (Küstner, 1893).

5. Complete division of the posterior uterine wall and cervix (Piccoli, Morisani, 1896).

6. Complete division of the anterior uterine wall and cervix (Spinelli, 1900).

7. Division of the constriction ring, posteriorly, through an abdominal incision (Haultain, 1901).

8. Division of the constriction ring, anteriorly, through an abdominal incision (Dobbin, 1905).

In the case reported, of a patient 23 years of age, who presented a complete inversion of a year's duration, the uterus was restored by the Spinelli method. The bladder was separated from the cervix; the vesico-uterine peritoneal pouch was opened; the inversion ring and vicinity examined; and the cervix divided in the median line. The division extended up through the constriction ring and down the anterior surface of the inverted uterus to the fundus. As the incision was extended down the corpus uteri, attempts were made at various stages to replace the uterus, but without success until the incision had been extended to the fundus, when the mucous surface was turned in and the peritoneal surface out. The excess of infiltrated corpus uteri was then trimmed away until the peritoneal edges of the uterine incision could be approximated. The uterine incision was then closed by deep and superficial sutures and the vaginal wound sutured, free drainage being employed. The patient recovered promptly. Menstruation began in two months and has been normal since (8 months); the patient feels well, and examination shows the pelvic organs to be practically normal.

The advantages of this method are as follows:

1. Being vaginal, it minimizes the amount of peritoneal contamination, a most important consideration when dealing with an infected structure.

2. As the reposition is accomplished by incision, there is not the bruising and perforation of the friable uterine wall which has so often accompanied attempted reposition by dilatation of the constriction ring.

3. Division of the anterior uterine wall is preferable to division of the posterior wall, because the work is thus more easily and accurately accomplished. The anterior uterine wall and anterior fornix lie toward the operator, hence are less deeply situated and more easily reached. Again, when the operation is anterior, the bladder may be lifted away, giving a wide space for investigation of the inversion-funnel and of the various pelvic structures, and also more room for the operative manipulations of incision, reposition, and suturing. Again, if there is a marked backward tendency, effective forward fastening of the uterus may be carried out through

the anterior incision. Again, a suture line on the posterior surface of the uterine wall, extending to the fundus, is more likely to form troublesome adhesions to the intestines, leading to obstruction, or to the posterior pelvic wall, leading to adherent retrodisplacement.

The points in favor of the posterior incision are that it eliminates the extra opening for drainage and that the sacro-uterine ligaments may be more conveniently shortened. But these minor advantages of the posterior incision are outweighed by the more important advantages of the anterior incision.

Schmitz, H.: A Modification of Webster's Endoperitoneal Shortening of the Round Ligaments. *Surg., Gynec. & Obst.*, 1913, xvii, 628.

By Surg., Gynec. & Obst.

The author dwells on the advantages and disadvantages of Webster's and Alfieri's intra-abdominal round ligament operations. He describes and illustrates his modification, which he has already employed in a few cases. An incision is made in the mesometrium enclosing the round ligament and the latter is divided and loosened down to the internal abdominal ring. A ligature is applied to the distal end, which is carried by the aid of a Barrett ligature carrier between the folds of the broad ligament underneath the utero-ovarian ligament, and brought carefully between the posterior wall of the uterus and its serous covering. The same procedure is repeated on the opposite side. The two ligatures are brought out into the abdominal cavity through a small perforation in the posterior peritoneal coat of the uterus and tied; a few interrupted chromic catgut stitches firmly secure the round ligaments to the myometrium. The proximal portion is now stitched to the distal portion, so that the round ligament assumes the shape of the letter Y.

The advantages claimed are: (1) The ligaments remain entirely extraperitoneal; (2) the operation depends for its success on the mucomuscular attachment; (3) the method retains the strongest portion of the round ligament for its functional use.

Farrar, L. K.: Hernia of the Uterus and Both Adnexæ. *Surg., Gynec. & Obst.*, 1913, xvii, 586.

By Surg., Gynec. & Obst.

The author gives a summary of cases, from literature, of hernia of one adnexa and hernia of the uterus and one adnexa, and then describes in detail hernia of the uterus and both adnexæ, citing twenty-five cases and adding one case occurring in her own practice. The patient, age 32, had had five children in easy labors. Early in her second pregnancy she acquired a left inguinal hernia, which was reducible until four weeks after her fifth confinement. Five weeks later, she was seen by the writer, who made the diagnosis, after a combined external and vaginal examination, of hernia of the uterus and both adnexæ. She was operated upon and the uterus and both adnexæ were found to be in the left inguinal canal, and in normal condition. Reduction of the

organs was easily accomplished and the wound closed by Bassini's method. The patient made a complete recovery and has had one child since, with no return of the hernia.

There is no single cause of hernia of the genitalia, but several factors together favor its formation; the canal is probably always of congenital origin, and in cases occurring in infancy, there is commonly malformation or displacement of the genital organs. Intra-abdominal pressure or contraction of the round ligament causes the adnexa to enter the hernial ring. In adult life, numerous pregnancies or a previous hernia of intestine, and early rising after labor with severe abdominal work are the common causes. The theories are advanced that, in some instances, the broad ligament, by an adhesion to the internal ring, may be the origin of the hernia, as in hernia of the intestine *par glissement*; and that when the intestine and the ovary are adherent to one another in the hernial sac, the ovary has preceded the intestine into the canal.

Whitehouse, B.: Menstrual Pain. *Universal M. Rec.*, 1913, iv, 385. By Surg., Gynec. & Obst.

The author objects to the old classification which takes it for granted that the source of menstrual pain resides in the uterus. He believes that the relationship between the ovary and severe menstrual pain is very close. He mentions a case where the routine treatment for dysmenorrhœa extending over a period of several years failed him and he finally decided to remove the uterus and its appendages. The right ovary contained a large calculus of phosphate and carbonate of lime, the size of a large cherry.

His second case was a woman of 40 who had always suffered from painful menstruation; the pain was located in the hypogastric region and was aggravated if the bladder and rectum were full. He performed a hysterectomy, with the removal of both uterine appendages. There was little pathology in the uterus except the typical menstruating endometrium, due to the fact that he had operated on the first day of the menstrual period; the tubes were slightly congested, but otherwise normal. The left ovary measured $1\frac{1}{2}$ by $\frac{1}{4}$ by 1 inch and showed extensive hæmorrhagic condition of the stroma and an immense number of petechial or punctiform hæmorrhagic points. The right organ showed a similar condition in a less advanced degree. The hæmorrhage appeared to be both recent and remote. The stroma presented dilated capillary vessels, but the majority of the red cells occupied an extravascular position and were lying free amongst the stroma cells. The older hæmorrhages showed various stages of organization. The tunica albuginea of both ovaries was thickened.

The third case was that of a woman 30 years of age. In early life her periods had been painful, and the pain had gradually increased in severity until she asked for surgical relief in order to be self-supporting. A hysterectomy and double salpingo-

oöphorectomy was finally decided upon. The uterus itself showed no pathology except that the os externum was decidedly patulous; the ovaries, however, presented a fairly typical appearance, described as "cirrhosis."

The last case mentioned showed on pelvic examination that the uterus was perfectly normal, but there was a rounded tender swelling in each posterior quadrant. A laparotomy showed that each ovary was the seat of a blood cyst, about the size of a tangerine orange, containing thick, coffee-colored fluid.

In treating dysmenorrhœa, the author advises making a pelvic and rectal examination during the height of the attack. If the cause is ovarian the affected organ will be extremely tender.

In the treatment, if the routine measures fail to modify the dysmenorrhœa, he believes that there should be a lookout for an ovarian origin, and if necessary do an exploratory laparotomy; in cirrhosis of the ovary he calls attention to ovarian grafting.

The author summarizes his remarks as follows:

1. The uterus is not always the seat of menstrual pain.
2. The cause of pain is frequently in the ovary and may be due to cirrhosis, hæmatoma, calculus, or adhesions.
3. Diagnosis may be cleared by a pelvic examination during the height of the attack.
4. If the ovary is the site of the pain, cervical dilatation is contra-indicated. If mechanical and local measures have failed, cœliotomy may be performed and the ovary explored.
5. If ovarian cirrhosis is present, ovarian grafting may be employed rather than double oöphorectomy or total hysterectomy.
6. The term "dysmenorrhœa" should be discontinued; it implies a symptom, not a condition.
7. If classification is required, divide cases of menstrual pain into ovarian, uterine, and nervous.

ROBERT T. GILLMORE.

Carstens, J. H.: Dysmenorrhœa. *N. Y. St. J. Med.*, 1913, xiii, 612. By Surg., Gynec. & Obst.

The author believes that our modern methods of living are largely responsible for dysmenorrhœa. So many girls are doing severe mental work; and hard mental work and poor nourishment prevent the development of the pelvic organs; hence, infantile uterus and dysmenorrhœa result. In older women who must earn their living there is often premature atrophy of the uterus.

In cases where there is no disease of the tubes and ovaries or no adhesions the author uses a silver-stem pessary. The uterus may be curetted first if the mucous membrane is diseased, otherwise not. The patient must, in every case, be surgically prepared and placed under an anæsthetic. He has some patients wear these pessaries for years. In carefully selected cases this treatment generally relieves all symptoms.

C. H. DAVIS.



Fig. 1. (Proust and Maurer.) Ligation of the right internal iliac. Section of the utero-ovarian ligament. The external iliac bared by slight traction on the clamps, and the grooved director going up on the vessel in search of the ureter.



Fig. 2. (Proust and Maurer.) Ligation of the right internal iliac. The ureter is raised with the internal leaf of peritoneum.

Fabre: External Hysterography (Externe Hystero-graphie). *Tr. Internat. Cong. Med.*, Lond., 1913, Aug. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author uses the word hysterography to designate a method of automatic registration of the uterine contractions during birth. He calls it external hysterography when the apparatus is applied to the abdominal wall. The contraction of the uterus depends on the expulsive force of the uterine muscles and hysterography gives more information as to the nature and variations of this force than palpation, chronometry, or the subjective feelings of the patient. He gives a description of the apparatus, which consists of a metal plate with an indicator attached, a Marey's drum, and two rotating cylinders.

The advantages of the hysterographic method are that (1) it can be used at any time during pregnancy, labor, or the puerperium without danger; (2) the respiration and movements of the foetus do not alter the curve; (3) the apparatus does not provoke abdominal pains and is easily worn.

The author's conclusions are as follows:

1. Hysterography gives information in regard to

the physiological force of the labor pains and also the effect of various forms of medication.

2. Small doses of chloral hydrate stop pains during pregnancy and regulate labor pains.

3. Small doses of sugar, pituitrin, and ergotin stimulate pains.

4. Morphia lessens the intensity of abnormally strong pains; scopolamine decreases the effectiveness of the pains.

5. Chloroform inhalation weakens the pains to a very slight degree.

The importance of ether inhalation here lies in its effect on the intensity of the pains. Under the control of the hysterograph a combination of chloral hydrate, ether and morphia can be used to decrease the pain without diminishing the expulsive force of the pains and without endangering the child's life.

Proust, R., and Maurer, A.: Ligature of the Internal Iliac Artery in Total Abdominal Hysterectomy for Cancer (Ligature de l'artère hypogastrique dans l'hystérectomie abdominale élargie pour cancer). *J. de chir.*, 1913, xi, 141.

By Surg., Gynec. & Obst.

Whether or not it is advisable to ligate the internal iliac artery as a preliminary step in total abdominal

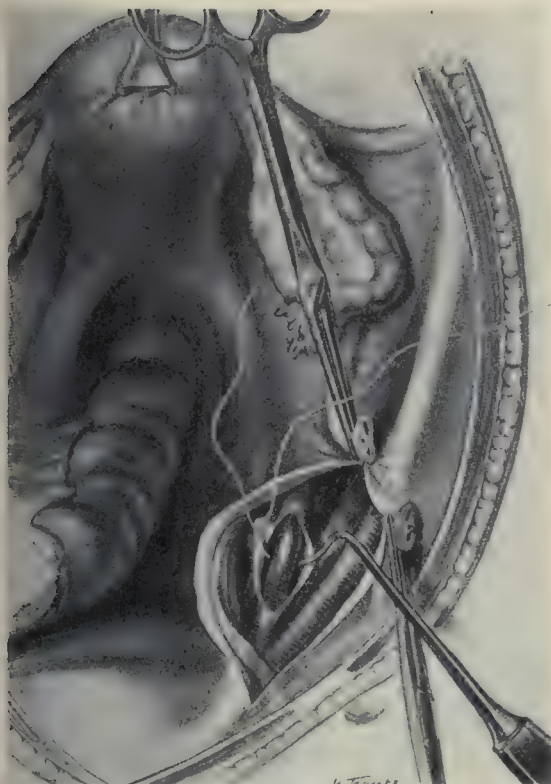


Fig. 3. (Proust and Maurer.) Ligature of the right internal iliac. The ureter is held internal to the internal iliac, the sheath of the vessel is open, and the aneurism needle passed from without, in.

hysterectomy for cancer is still a disputed question. The authors, having first discovered its utility in stout patients, have been led to its adoption as a routine measure.

Three conditions are necessary for its proper execution, viz.:

1. The artery should be tied external to the ureter.
2. The artery should be tied at the upper extremity of the principal peritoneal incision.
3. The artery should be tied at not more than 2 cm. from its origin.

In their anatomical studies, Proust and Maurer have found that the point of crossing of the artery by the ureter varies according to the height at which the common iliac divides. On the right it may cross proximal to the bifurcation, or may cross the external iliac at varying distances from the bifurcation. On the left it may cross proximally, or at the bifurcation, or the external iliac. On the left side, if the pelvic colon is so short as to embarrass the operator, it is freed from the peritoneum sufficiently to make the operation easy. The authors' technique follows:

After a long incision through the abdominal wall

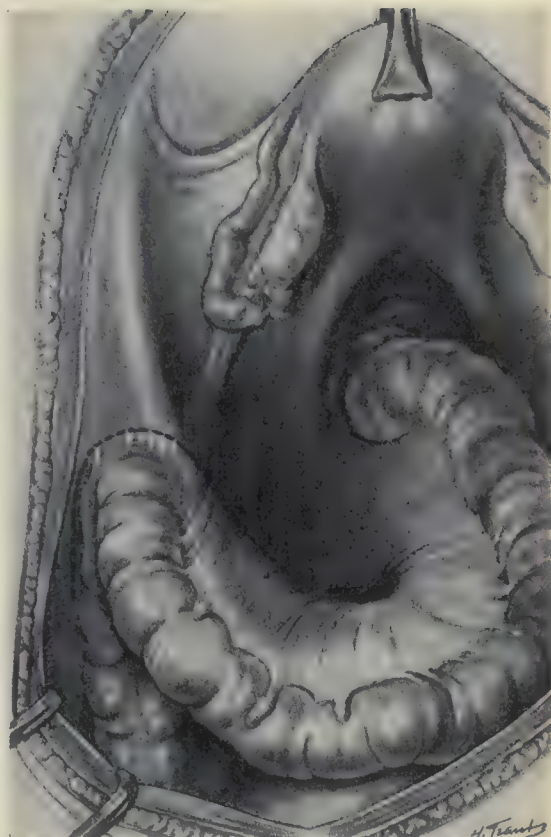


Fig. 4. (Proust and Maurer.) Ligature of the left internal iliac. The line of incision necessary when the sigmoid is short and situated low down.

from the symphysis past the umbilicus, each iliac fossa is well exposed to its superior border. The fundus of the uterus is pulled forward and the ligation of the right internal iliac undertaken.

The infundibulopelvic ligament is put on stretch, and the utero-ovarian vessels identified and cut between clamps as they cross the upper part of the field. Slight traction on the external clamp bares the external iliac artery; following this artery upward, the ureter is generally encountered before the bifurcation is reached. It is raised with the internal leaf of peritoneum without isolating it from its coverings, and the incision in the peritoneum continued until the bifurcation is plainly visible. After carefully incising the covering of the internal iliac and exposing the external and internal iliac veins, the internal iliac is ligated within 2 cm. of its origin, the aneurism needle carrying the ligature being passed in from without. After the ligation of the internal iliac the peritoneal incision is prolonged toward the round ligament, which is cut. Next, always keeping external to the ureter, the uterine artery is exposed and cut between clamps. The



Fig. 5. (Proust and Maurer.) Ligation of the left internal iliac. Showing the two layers of retrocolic fascia with the utero-ovarian ligament divided, and the posterior layer of fascia incised. The ureter is seen at the upper angle of the incision.

central end of the uterine is ligated, the peripheral end raised with the superior part of the parametrium, and the ureter exposed throughout its course to the bladder.

Ligation of the internal iliac artery on the left side is done as follows:

The mesosigmoid is first examined and, even if only moderately short, is loosened from its parietal attachment in order to facilitate both the ligation of the artery and the ultimate peritonization of the wound. The pelvic colon is drawn inward and upward in order to expose as well as possible the intersigmoid fossa and the secondary root of the mesocolon. An angular incision through the peritoneum is now made. The right branch of this incision is parallel and internal to the external iliac vessels. The left branch is parallel and external to the descending colon (Fig. 5).

This incision is made without any bleeding, with the aid of curved scissors, and the colon-sigmoid angle loosened. The left adnexæ, as a whole, are next drawn forward and to the right, the utero-



Fig. 6. (Proust and Maurer.) Ligation of the left internal iliac. The sheath of the artery is open, the artery ligated from within, out.

ovarian pedicle cut at its superior attachment, and the deep layer of retrocolic fascia incised along the external iliac artery (Fig. 6). The bifurcation of the common iliac is generally reached before the ureter comes into view. If the internal border of the common iliac be followed upward, the ureter is easily identified and raised with its covering in the outer leaf of peritoneum, as on the right side. The internal iliac is then easily seen, and it is only necessary to raise the ureter a sufficient distance outward to safeguard it in the ligation of the artery. The internal iliac is next bared, its trunk examined, and, after opening its sheath anteriorly, it is ligated in a similar manner to that on the right. The incision external to the ureter, when prolonged, permits, as on the right, the excision of the entire broad ligament, the high ligation of the uterine artery, and the removal of the parametrium.

The authors again emphasize the fact that the preliminary ligation of both internal iliac arteries makes the operation much drier and facilitates the dissection of the parametrium. However, both uterine arteries and the sacro-uterine ligaments are included in secondary ligations, the latter in two steps

following the technique of Lecène. The advantages of the authors' technique are best realized in the dissection of the peritoneum in the pouch of Douglas; the ureters are plainly visible and the dissection is practically bloodless. Before opening the vagina, the authors follow the technique of Bumm, always clamping before cutting, and securing cut-surfaces with secondary sutures to insure perfect hæmostasis.

Since November, 1910, Proust and Maurer have performed this bilateral ligation of the internal iliacs eight times. One case in which a resection of bladder wall was necessary because of cancerous infiltration had a fatal outcome. The remaining seven cases recovered, and the operation was so facilitated by the preliminary ligation of the internal iliacs that the authors are convinced the procedure should become more general. ELLIS FISCHEL.

Bland-Sutton, J.: The Visceral Complications Met with in Hysterectomy for Fibroids, and the Best Methods of Dealing with Them.
Brit. M. J., 1913, ii, 1130. By Surg., Gynec. & Obst.

The author calls attention to the conditions on the borderland of medicine and surgery and speaks of the effects of fibroids on the circulation, the thyroid gland, the renal organs, and the serious responsibility of operating when diabetes or cardiac lesions are present. He believes that all patients suffering from fibroids should have a careful medical examination before passing into the hands of the surgeon.

In patients having valvular murmurs with satisfactory compensation, the removal of the uterus containing a large fibroid will sometimes relieve an embarrassed heart. Fibroids are frequently associated with valvular lesions, especially those which result from rheumatic fever; also, in many women where a submucous fibroid has caused a profound anæmia, a loud murmur will be heard on auscultation and a careful examination will show a satisfactory compensation. As enlargement of the heart may be caused by the extra work incident to the presence of a large fibroid, the author believes that some of the deaths which are attributed to pulmonary embolism occur in women who suffer with a chronic but unrecognized heart disease. Recorded statistics indicate that one per cent of women who undergo abdominal hysterectomy for fibroids die of a fatal post-operative pulmonary embolism, which he believes is often due to the excessive use of buried sutures for closing the incision in the abdominal wall.

On three occasions the author has removed uteruses containing fibroids from patients suffering with goiter, followed six months afterward by a decrease in the goitrous thyroids. A fatal case, in which the patient died 56 hours after operation, confirms his opinion that women suffering from a well-marked exophthalmic goiter are bad subjects for any surgical procedure.

As a rule, diabetes is a contra-indication for hys-

terectomy, especially so in young women. All evidence tends to show that there is some relation between the hypophysis and the genital glands. In acromegalic women menstruation is suppressed and the urine contains sugar. Experimental evidence tends to prove that there is a temporary enlargement of the hypophysis during pregnancy.

A large submucous fibroid produces similar changes in the uterus to those set up by the growth of the foetus, associated with sugar in the urine.

Women suffering from large cervical fibroids frequently have albumin in their urine, which disappears after operation. A systematic examination of urine within 36 hours after pelvic operation showed, in nearly all cases, the colon bacillus. The author is as unable to explain why this is so as is the obstetrical physician unable to give an opinion as to why the urinary system is invaded by the colon bacillus in the pyelonephritis of pregnancy. After the operation, should the bladder remain empty, injury to both ureters should be suspected. When an injury has occurred to the ureter during the operation, the surgeon should attempt to anastomose the cut ends. If he fails in this, he should implant the proximal end in the bladder wall, notwithstanding that the urologists insist that when this is done it becomes sclerosed by chronic urethritis, which narrows and finally obliterates the lumen. After citing several remarkable cases, the author states that it is possible that a ureter has been tied in the course of a hysterectomy, and the patient has recovered without anyone having a suspicion that such an accident has happened.

Intestinal adhesions are rare unless there has been an infection of the uterus or fallopian tubes. There may be a complication of cancer of the intestines, and in such cases he completes the hysterectomy and then excises the cancer and does an end-to-end anastomosis if the patient's condition justifies it — if not, a secondary operation must be done. Often-times a differentiation between fibroid and cancer of the colon is very difficult.

There is frequent coincidence between uterine fibroids and gall-stones without any direct relations. When both conditions exist and there is evidence that there is an impacted stone in the common duct, the stone should be removed first because of the perilous post-operative hæmorrhage caused by cholæmia, the secondary operation to be done when the patient has recovered from her cholæmia.

ROBERT T. GILLMORE.

Beuttner: Transverse Excision of a Wedge from the Fundus of the Uterus, Preceding Bilateral Extirpation of the Adnexa to Maintain Menstruation (Die transversale, fundale Keilexcision des Uterus als Vorakt zur Extirpation doppelseitig erkrankter Adnexe mit Erhaltung der Menstruation). *Tr. Internat. Cong. Med.*, London, 1913, Aug.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

This method is based on the principle enunciated by Fauré, that operation on the adnexa should be

from the midline toward the pelvic walls and from below upward. A transverse wedge-shaped excision is made from the fundus of the uterus after preliminary ligation to prevent hemorrhage. The excised wedge is split in the middle and each piece freed from the corresponding broad ligament by one incision with the scissors, after which the wound, which extends to the uterine cavity, is sutured. First the left and then the right adnexa are removed from below upward and from within outward, and the broad ligament is sutured. The parietal peritoneum of the anterior abdominal wall is then sutured to the upper posterior wall of the uterus, from left to right, just back of the sutured uterine wound, which is thus to a certain degree brought outside the peritoneum, and the uterus, which is often found in fixed retroflexion, is brought into a position of permanent mobile ante flexion. The advantages of the method are that it insures the maintenance of the menstrual function and obviates the possibility of chronic metritis. The results are that menstrual disorders disappear and the menstrual flow becomes normal in amount and duration.

ADNEXAL AND PERIUTERINE CONDITIONS

Carstens, J. H.: A Seven-Pound Ovarian Tumor That Developed in Nine Days. *Am. J. Obst., N. Y.*, 1913, lxi, No. 5. By Surg., Gynec. & Obst.

Under the above caption, Carstens relates the history and operation findings of a case of a simple cyst of the ovary which was operated upon by him nine days after the patient noticed abdominal enlargement. A II-para, 36 years of age, who never had been ill, awoke one morning to find that her abdomen had enlarged over night. The swelling rapidly increased in size, and the patient began to have symptoms of infection, no other symptom being noted. An ovarian cyst with twisted pedicle and infected contents was removed by the author, who believes that the cyst was really of longer duration, and that previously it lay in the true pelvis, but, outgrowing its bed, it was delivered overnight, into the abdomen, and that twisting of its pedicle explains its further rapidity of growth and its infection. Recovery of the patient followed the operation.

N. SPROAT HEANEY.

Porter, M. F.: Sarcoma of the Ovary. *Tr. Western Surg. Ass.*, 1913, Dec. By Surg., Gynec. & Obst.

The author based his conclusions upon a comprehensive study of the literature, including 26 cases found reported in satisfactory detail, together with three cases of the author's, making 29 in all. Many sarcomata of the ovary have been overlooked in the past because of incomplete microscopical study, and for the same reason many tumors of the ovary were classed as sarcomata which in reality were not sarcomata at all. Averaging the percentages of 16 observers covering over 3000 cases of ovarian tumor, we find the percentage of sarcomata to all other tumors to be 5.08 per cent. About 20 per cent of all

ovarian tumors are malignant and about 5 per cent are sarcomatous. Contrary to the rule, sarcoma of the ovary frequently involves both organs. This double involvement occurs in about 20 per cent of cases, and the growth is usually rapid. Sarcomata of the ovary, on palpation, are found in the majority of the cases to be solid or semisolid. The ascites in connection with ovarian tumor indicates malignancy, but not the character of malignancy, nor does the ascites mean that the disease involves the peritoneum.

Sarcomatous tissue is often found in dermoids, and about 10 or 12 cases of carcinosarcoma of the ovary have been reported. Round-cell sarcomata are more common in the young and spindle-cell more common in adults. There is great difficulty in classifying malignant tumor of the ovary, and the diagnosis is seldom made save at operation or post-mortem. A close study of each case in the light of our present knowledge will make it possible to make the diagnoses oftener in the future than in the past. Rapidity of growth from the beginning and rapid growth in a tumor that has been stationary for a long time raises the suspicion of sarcoma.

Pain is a prominent symptom in more than one third of the cases. Disturbances of menstruation are more common in malignant than in non-malignant tumors; especially is this true of amenorrhoea. The mortality of the operation is much higher in children than in adults. The ultimate prognosis seems the best in fibrosarcoma, although a permanent cure can be expected only in about 10 per cent of all cases; however, even in desperate cases, the results of the operation are sometimes surprising. Seeligman reports the successful treatment of a case of metastasis in the spinal cord by X-rays and by arsacetin, injected intravenously. One case of cure lasting over a period of two years was reported as following operation and subsequent administration of Coley's fluid.

Kudoh: Histogenesis of Dermoid Cysts of the Ovary (Zum Studium der Histogenese der Ovarialdermoide). *Tr. Internat. Cong. Med.*, Lond., 1913, Aug.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author gives a thorough review of the literature of the subject, with a detailed report of five cases of his own, giving results of microscopic examination. Derivatives of all three germinal layers were found in the preparations. Kudoh is opposed to the theory of misplaced skin elements and also to Bandler's theory of ectodermal invagination, and believes that dermoids of the ovary originate in unfertilized ova.

Pollosson, A., and Violet, H.: Cysts of the Ovary Due to Tuberculosis (Les productions kystiques de l'ovaire liées à la tuberculose). *Lyon. chir.*, 1913, x, 349. By Journal de Chirurgie.

In addition to the classical type of tuberculosis of the adnexa, which is certainly very frequent,

Pollosson and Violet have described an inflammatory tuberculosis of the adnexa, the most important types of which are primary hydrosalpinx and microcystic ovary.

They endeavor in this work to confirm, clinically, the existence of such a condition of the ovary and there are three kinds of cases on which they base their conclusions.

In the first place, there are the cysts of the ovary which are met with in the course of the development of follicular tuberculosis of the tube or peritoneum. Sometimes these are small multiple cysts, sometimes they are cysts as large as an orange, an infant's head, or even an adult's head. In one of their cases there was a cyst containing two quarts of a bloody serous fluid, located on a tube which was very evidently tubercular.

In the second class of cases, there are polycystic ovaries or large serous cysts of the broad ligament, associated with old tubal or peritoneal tubercular lesions, which are now latent but have left peritoneal adhesions or caseous deposits in the tubes.

The third class of cases are more numerous but less evident. Here, the ovarian cysts are not accompanied by any visible tubercular lesions, but preceding events or their final development make the existence of a tubercular intoxication probable. They report several cases in young women in rather poor health, with irregular menstruation. Bloody cysts of the corpus luteum of varying sizes were removed, and afterwards they recurred in conjunction with pulmonary or genital tuberculosis.

The anatomical type of these tubercular cysts is variable; they may take the form of a microcystic oöphoritis, there may be a large number of serous or bloody cysts, unilocular or multilocular, there may be follicular cysts or cysts of the corpus luteum. Clinically, they differ from neoplastic cysts in that they may disappear, from absorption of their contents or from rupture.

The symptoms are those of chronic oöphoritis; irregularities of menstruation, generally in the direction of retardation; diminution of the flow, and from time to time prolonged metrorrhagia; intermenstrual or premenstrual pain; and sterility, frequently associated with an exaggeration of the sexual instinct. The latter symptom is frequently observed in animals and is considered by veterinarians as a precursor of tuberculosis.

CH. LENORMANT.

Jayle, F.: Tubercular Salpingitis (La tuberculose de la trompe). *Presse méd.*, 1913, xxi, 505.

By *Journal de Chirurgie*.

Tuberculosis of the tubes is more frequent than it is generally believed to be. It is often incorrectly diagnosed because it is masked by simultaneous infection with ordinary bacilli, gonococci, streptococci, colon bacilli, tetragens, etc. Jayle divides tubercular salpingitis into two great classes: (1) Pure tubercular salpingitis, and (2) tubercular salpingitis associated with some other infection.

Pure tubercular salpingitis may be divided into four varieties (a) Miliary granular tuberculosis of the peritoneum with ascites, (b) pyogenic tuberculosis, (c) lardaceous tuberculosis, and (d) polymorphous tuberculosis, pyogenic and granular or pyogenic and lardaceous.

When tuberculosis is complicated by another infection the tubercular process may be primary or secondary. The pyogenic form is the most predisposed to secondary infection. Tubercular abscesses, within or near the tubes, are very easily invaded by ordinary infectious micro-organisms. The infection may be through the intestines, the genital tract, or the blood. Where it takes place from the intestine it is generally colon bacilli; when through the genital tract it is gonococcus, streptococcus, or staphylococcus.

The only way of establishing the diagnosis with certainty is by histologic examination. The only form that can be easily diagnosed clinically is the granular form with ascites.

Treatment should always be surgical. Jayle is so thoroughly convinced of the superiority of the conservative operation that in girls and young women he always spares the uterus and ovaries, even when the lesions are very extensive, and preserves menstruation. The results of his operations have justified him in this course. All his patients have not only completely recovered, but menstruation has been maintained. They have not had any general trophic disturbances or any genital symptoms, and several of them have married.

J. DUMONT.

EXTERNAL GENITALIA

Wade, H. A.: Description of a New Method of Repair for Vaginal Hernia; with a Report of 140 Cases in Which It Was Used. *Med. Rec.*, 1913, lxxxiv, 937. By Surg., Gynec. & Obst.

The author has followed up 140 cases upon whom he had performed his operation for repair of the perineum, and in none of them has he found a failure.

The technique of the operation is as follows:

1. After surgical preparation, and after the patient is anesthetized and catheterized, the field of operation is painted with a 50 per cent solution of tincture of iodine.

2. An incision is made at the lateral mucocutaneous junction of the posterior aspect of the vaginal outlet. The same position is maintained on the opposite side of the vaginal outlet, and with little traction a curved incision is made with the convexity directed toward the anus. The flap of vaginal mucous membrane is then dissected upward and allowed to remain. Lateral dissection is carried out with the fingers until the firm fascial layer is found, and these layers of fascia are brought together with a continuous suture of No. 2 chromic gut. The superficial fascia is united with the same

suture and the knot is buried. The skin is united with Michel's metal clips.

The distinguishing features of the operation:

1. Fascial repair; a fascia and not a skin perineum subsequently.

2. The mucous membrane flap protects the sutured tissues from the irritating discharges from above.

3. The catgut is entirely buried by sealing the wound with metal clips.

4. The operation is a simple one and may be completed in from six to ten minutes.

EUGENE CARY.

MISCELLANEOUS

Redlich: The Significance of Internal Secretion in the Physiology and Pathology of the Female Genital Apparatus (Die Bedeutung der inneren Sekretion in der Physiologie und Pathologie der weiblichen Genitalsphäre). *Arb. a. d. geburtsh.-gynäk. Klin. von Prof. Redlich, St. Petersburg, 1913, i, 1.*

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Recent research shows that the hypotheses of reflex nervous influences in the female genital sphere must be replaced by those of chemical interrelations, i.e. reciprocal chemical relations of different parts of the body. It is certain that menstruation is caused by ovarian hormones and not by reflex nervous irritation. Based on the literature, which is minutely given, and on personal observations, the author describes the chemical correlation of the polyglandular organs in the female and attempts to determine the relation of the non-genital ductless glands to the genital ones. The ovary inhibits the thyroid gland, the hypophysis and adrenals excite the parathyroids. According to Caro, the parathyroids, the thymus, and the pancreas possess an action inhibitory to that of the thyroid gland and the adrenals; moreover the uterus inhibits the thyroid and stimulates the adrenals, and the thymus stimulates the hypophysis. According to Klose, Lampe, and Liesegang, the thymus stimulates the thyroid. The ovary stimulates the uterus and the mammary gland inhibits the ovary. Redlich illustrates the action of acromegaly on the genital system by pictures, a röntgenogram, and a case report.

BRAUDE.

Von Hertzen, V.: Parotitis after Abdominal Operations, Mostly Gynecological (Über Parotitis nach operativen Eingriffen in der Bauchhöhle, insbesondere an dem weiblichen Generationsorganen). *Finska läk. sällsk. Handl., Helsingfors, 1913, lv, 52.*

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author reports 12 cases of parotitis after operations, most of them being gynecological. They occurred among 4000 peritoneal operations and he comes to the conclusion that metastatic, in comparison with ascending parotitis, is a very rare occurrence and appears only in connection with pyæmia. In one case an extreme loss of blood seems

to have been an etiological factor, in 2 cases an enfeebled general condition, in 8 cases there was anæmia and more or less weakened general health. Anæsthetization was uneventful except in one case where, when the tumor was removed, there was intermission in pulse and respiration. Chloroform was given in all cases, and ether also in 3 cases. In 2 cases pregnancy was present. The complication generally occurred on the first to the third day, in 2 cases after 10 days. The parotitis was generally accompanied by an atypical fever.

The duration of the unilateral and bilateral cases which ended in absorption was, on an average, 7 days. In 2 cases abscesses were formed; 2 cases had a fatal termination. If the operation is of long duration or involves great loss of blood, warm physiological salt solution should be given either by the rectum, subcutaneously, or intravenously. Food and drink should be given as soon as possible. As soon as swelling or pain appears in the region of the parotid gland hot water compresses or an ice bag should be applied. Painting with iodine or an application of mercurial ointment or ichthyol may be used. If an abscess is formed the pus should be drained out as soon as possible. BJÖRKENHEIM.

Pampanini, G.: Association of Tuberculosis and Tumors of the Female Genitalia (Contribution à l'étude de l'association de la tuberculose et des néoplasmes génitaux). *Ann. de Ostet. e Ginec., 1913, xxxv, 217.*

By Journal de Chirurgie

Pampanini examined 150 specimens from operations for fibroids, cancers, and cysts of the ovary to find out how often these conditions were associated with tuberculosis. The examination was positive in 13 cases.

In all these patients there was more or less evidence of old or recent tuberculous lesions of the lungs or pleura. Tuberculosis coexisted 3 times with fibroid of the uterus, 9 times with ovarian or parovarian cyst, and once with cancer of the uterus. In all cases it involved the tubes, and in 2 cases the uterus also. Minute examination of the specimens showed the frequency of uterine and adnexal tuberculosis and proved that it is associated with neoplasms more frequently than is generally believed.

Instances of the frequency of the association, as shown by operation, is necessarily less than the actual number of cases, as many patients do not present themselves for examination and many others are not operated on. In the cases noted, the percentage of tuberculosis with ovarian cyst was 8.5; with fibroids 2.2; with cancer 1.9. The larger proportion found associated with ovarian cysts is due to the fact that these are so close to the tubes which are generally affected by tuberculosis. Of the 9 cysts coexisting with tuberculosis, 4 were themselves involved in the tubercular process. In 2 cases, the same was true of the uterus and other parts of the peritoneum. In the three cases of fibroid, the tumor was not affected by tuberculosis, nor was the uterine cancer. It is difficult to deter-

mine whether the genital tuberculosis was primary. The author believes it was primary in 4 cases. In the others, the disease seemed to be primary elsewhere, especially in the lungs and spleen. When the cyst itself is invaded, this is always secondary.

As to the influence exerted on the growth of the tumor, and by the tumor on the localization of the tubercles, it is almost certain that tuberculosis provokes a certain degree of growth in these tumors, particularly in the ovarian cysts; this, however is not so probable with the fibroids. On the other hand, it is believed that the presence of a tumor predisposes to genital tuberculosis, a conclusion based on certain observations, but at present not directly proven.

A. BASSET.

Schmidt, O.: The Surgical Treatment of Peritoneal and Genital Tuberculosis (Die operative Behandlung der Peritoneal- und Genitaltuberkulose). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxiii, 404.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author believes that general peritoneal tuberculosis originates just as frequently from genital tuberculosis as infections of the genitals from the peritoneum. Primary, isolated ovarian tuberculosis is very rare according to his experience. The palpation of nodules in Douglas' pouch is not a diagnostic proof. The subcutaneous tuberculin reaction, the ophthalmic and von Pirquet reactions are uncertain means of diagnosis. Based on 37 cases operated during the last 12 years with 12 deaths, he recommends operation for the majority of cases, especially as he saw a more or less complete regression of the tuberculosis in 3 relaparotomies. The method of procedure must be based on the findings. A systematic sanitarium treatment is absolutely required in conjunction with the surgical procedure.

EBELER.

Opitz, E.: The Relations of Inflammatory Conditions of the Colon to the Female Genitalia and to Functional Neuroses (Einiges über Beziehungen von Entzündungen des Dickdarms zu den weiblichen Geschlechtsteilen und zu funktionellen Neurosen). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxiii, 362.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Opitz observed a case of acute typhlitis during pregnancy with symptoms identical with those of acute appendicitis. The diagnosis was made only on operation. The labor pain contractions were definitely influenced though the presence of an extensive peritonitis did not involve the uterus. Opitz recommends in such cases the operative emptying of the uterus followed immediately by laparotomy for the appendicitis.

The author believes that such genuine appendicitis cases are undoubtedly more common than is supposed. In most cases a differential diagnosis will be impossible. An important fact, however, is that in typhlitis the leucocyte count will remain much lower and the differential count will not show an increase in the polymorphonuclear cells at the expense of the

mononuclear. The chronic appendicitis so common in young women is better known.

Inflammations analogous to those occurring in the appendix may take place in any part of the colon, especially in the ascending colon, in the flexures, and in the sigmoid. Sigmoiditis is especially important to the gynecologist. Many vague symptoms referable to the lower abdomen are due to chronic colitis and not to perimetritis and perispermio-oöphoritis. Before making a diagnosis of neurasthenia or hysteria it is important to make a thorough physical examination and exclude all organic causes. The involvement of the internal genitalia from the colon is much more common than is generally supposed.

HANNES.

Graves, W. P.: Relationship Between Gynecological and Neurological Diseases. *Boston M. & S. J.*, 1913, clxix, 557. By *Journal de Chirurgie*.

Various gynecological disorders are discussed by the author and an attempt is made to determine their relation to nervous disorders. Menstruation is first described fully as regards the general physical and mental changes which take place in woman at that time. There seems to be a gradual storing up of energy in the period preceding the menstrual flow, which reaches its maximum just before the menstrual period and suffers a marked drop at the time of the period and immediately following it. During the period the mental condition of the woman becomes hypersensitive.

Of the menstrual irregularities which are especially apt to produce neuroses, dysmenorrhoea is by far the most important. In the majority of cases this condition has a definite anatomic basis and operative procedure is indicated in most of these cases. Many of them, however, cannot be treated successfully by the ordinary operative measures and hysterectomy with castration may even be necessary.

Where there is a nervous disease as the primary condition, we often find the symptoms greatly exaggerated during the catamenial period. Most crimes committed by women are done during the menstrual period. Most of the women suicides are menstruating or are in the climacteric. Among the women inmates of insane asylums the particular symptoms are apt to become exaggerated during the menstrual period. As regards the relief of insanity by gynecological operations where diseased conditions are found in the pelvis, there seems to be a variance of opinion. Some authorities claim a large percentage of recoveries from such procedures, while others are very dubious about the results.

The relation between neuroses and the artificially produced menopause is of great importance, and the author has gone to some length to determine what nervous disturbances, if any, are commonly produced by removal of both ovaries. He arrives at the conclusion that patients do not suffer from hot flushes so much as during the natural menopause, and that as a rule the patients are less nervous than before the operation for pelvic disease.

OBSTETRICS

PREGNANCY AND ITS COMPLICATIONS

Outerbridge, G. W.: Decidual Reaction in the Appendix in Intra-Uterine Pregnancy. *J. Am. M. Ass.*, 1913, lxi, 1702. By Surg., Gynec. & Obst.

After a brief introduction, the author reports the case of a woman, aged 37, who was delivered of a full-term, living child. During labor, she complained of excessive pain and her abdomen was tender. Ten hours after delivery, the abdomen was enormously distended and the patient vomited large quantities of stercoraceous material. At operation, the appendix appeared acutely inflamed and there was considerable free pus in the abdominal cavity. The patient died the next morning and no necropsy was performed. Microscopical examination of the appendix showed numerous groups of large, polygonal cells scattered throughout the greatly thickened subperitoneal tissue. The situation of these cells stamps them as having arisen from the connective-tissue cells of the thickened stroma of the serosa. Nowhere did they show a tendency to spread out in a sheet immediately beneath the surface, as would surely be the case had they arisen from the surface of the endothelium.

The author concludes the paper with a discussion as to the probable cause or explanation of the presence of decidual tissue in the appendix. A second case is cited, of a woman aged 22, who was operated on for an acute appendiceal attack during the sixth month of pregnancy. The same characteristic cells were found, but not quite so numerous as in the other case. The patient recovered without disturbance of the pregnancy.

EDWARD L. CORNELL.

Unterberger, F.: Pregnancy in Both Tubes at Once (Gleichzeitige Schwangerschaft beider Tuben). *Monatschr. f. Geburtsh. u. Gynäk.*, 1913, xxxviii, 247. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Pregnancy in both tubes simultaneously is very seldom observed in contrast to tubal pregnancies which frequently occur first in one tube and later in the other. Extra-uterine and intra-uterine pregnancy occurring at the same time has seldom been noted, as also the implanting of two ova in one tube. Thus far only 16 cases of simultaneous pregnancy in both tubes have been reported, one of them being a case in which there was one foetus, with a placenta, in one tube, and two foetuses, with one placenta, in the other. The author says the diagnosis of bilateral tubal pregnancy is certain if chorionic villi, that will take a stain readily, are found in both tubes. It is not possible that one tube could have become pregnant, the ovum died, and then the other one have been impregnated, because about six months

after the termination of a tubal pregnancy the chorionic villi can no longer be demonstrated. Moreover, superfetation is improbable, because generally after the beginning of pregnancy ovulation ceases.

The author describes his own case: A thirty-year-old woman who had had one child and menstruated regularly afterwards. After six weeks' cessation of menstruation, she had severe pain in the left side of the abdomen and fainting attacks; 8 days later a similar attack followed by diffuse pain. On operation, a left-sided tubal abortion was found, which had led to the formation of a retro-uterine hæmatocele the size of a child's head. On the right, there was a tubal rupture with a small peritubal hæmatocele, which was distinctly separated from the one on the left. Extirpation of both tubes was done, the right ovary being left in position. The recovery of the patient followed the operation.

RATH.

Von Schrenck, A.: Uterine Myomata and Pregnancy (Über Uterusmyom und Schwangerschaft). *Petersb. med. Ztschr.*, 1913, xii, 140.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Pregnancy in a myomatous uterus is of frequent occurrence. The influence of a myoma on conception, pregnancy, labor, and the puerperium varies with the location of the growth. Large subserous tumors very rarely cause a hindrance to conception. On the contrary, intramural, submucous, and cervical myomata are much more active in this respect. The diagnosis of myoma and pregnancy may be difficult, at times impossible, during the early period of pregnancy.

An increase in the size of the tumor almost always takes place during pregnancy; and is due in part to an oedematous infiltration, and in part to a hyperplasia and hypertrophy of the muscle fibers. A change in form, characterized by a flattening thereof, is typical. Necrosis as a result of axial rotation of the myomatous gravid uterus or compression of the blood-vessels, or syphilitic disease of the vessels is rare during pregnancy.

The frequency of necrosis of the myoma during pregnancy grows with the increasing age of the patient; it is relatively frequently seen during the puerperium; a marked decrease in size of the myoma takes place, as a rule, post-partum. Cervical myomata most frequently cause disturbances during labor. The simultaneous occurrence of myomata and pregnancy is not an indication for active interference; complications alone require active treatment. Enucleation of the tumor or extirpation of the uterus are to be considered during the early

months of pregnancy; cesarean section, myomectomy, eventually hysterectomy, at the termination of pregnancy.

JAEGER.

Sellheim, H.: Tuberculosis and Pregnancy (Tuberkulose und Schwangerschaft). *Tuberculosis*, 1913, xii, 271.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In considering the relation between tuberculosis and pregnancy the following facts should be borne in mind: Non-pregnant women with active tuberculosis should not be allowed to become pregnant, at least not until the tuberculosis has been rendered inactive. In pregnant women with active tuberculosis, abortion should be performed as early as possible, and further pregnancy prevented until the tuberculosis has been rendered inactive. Patients with inactive tuberculosis should be very cautious about undertaking childbearing, because there is great danger of lighting up a stationary tuberculous focus. If a woman become pregnant under such circumstances she should be treated prophylactically; she should be placed under the most favorable conditions and treated as if the reactivation had already taken place. Women with active tuberculosis should not be allowed to nurse their infants at all, and those with inactive tuberculosis only in moderation.

WEBER.

Heil, K.: Total Extirpation of the Gravid Uterus in Tubercular Patients (Die Totalexstirpation des graviden Uterus bei Phthisikerinnen). *Klin.-therap. Wchnschr.*, 1913, xx, 1017.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author advocates the total extirpation of the uterus, without removal of the ovaries, as practiced by Bumm, in pregnant women with tuberculosis. The operation can all be performed at one time; it insures sterility, and puts a stop to the exhausting menstrual discharge. To avoid the evil results of general anæsthesia he recommends lumbar or conduction anæsthesia by Ruge's method. Though it is opposed by many, total extirpation, if used only when there are strong indications for it, is allowable, theoretically, and has already been used in numerous cases.

EHRENBERG.

Massaglia, A.: Tetany Resulting from Experimental Parathyroid Insufficiency During Pregnancy and Eclampsia (Tetanie infolge experimenteller Parathyroidinsuffizienz während der Schwangerschaft und Eklampsie). *Zentralbl. f. allg. Pathol. u. pathol. Anat.*, 1913, xxiv, 577.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Vassales observed tetany in a nursing female dog after removal of the parathyroids and advanced the theory that eclampsia is due to an insufficiency of those glands. This theory is strengthened by some interesting experiments performed by Massaglia.

The parathyroids of two female dogs were extirpated almost completely. Both dogs remained well with

the exception of a slight albuminuria. A few months later, after the animals had become pregnant, they were taken ill; the body commenced to tremble; in a short time the symptom-complex of tetany developed. It improved somewhat on the administration of parathyroidin, but recurred repeatedly. The first animal died of tetany during the third labor following the extirpation. The microscopic examination of the liver and kidneys showed fatty degeneration.

Parathyroid insufficiency therefore first manifests itself during pregnancy and the puerperium by tetanic attacks resembling the clinical picture of eclampsia. The author admits, however, that parathyroid insufficiency is not always the only factor, or even an essential one, in the production of this varied clinical picture.

KREBS.

Nacke and Less: Rapid Delivery in Eclampsia; with a Contribution to the Blood-Letting Treatment of the Same (Kritische Bemerkungen zur Schnellentbindung bei der Eklampsie mit einem Beitrag zur Aderlasstherapie der Eklampsie). *Zentralbl. f. Gynäk.*, 1913, xxxii, 1189.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The authors are in favor of rapid delivery. Its success does not depend alone on the loss of blood as in blood-letting, but the evacuation of the uterus, the release of the abdominal organs from pressure, and the decrease of intra-abdominal pressure also play an important rôle.

The mortality in 79 cases noted was four; the puerperal eclampsias were attended by no fatalities. The conservative treatment with primary venesection was not employed in these cases, but it was used in 24 cases of puerperal eclampsia and as an aid to active therapy.

A marked difference in the decrease of the albumin content of the urine, and increase of diuresis were not observed in the cases treated either with or without venesection. Profuse blood-letting does not cause shock in the sense that venesection-eclampsias during the puerperium show a higher mortality.

HIRSCH.

Clivio, I.: Placenta Prævia (Placenta Prævia). *Arte ostetr.*, 1913, xiv, 209.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In Clivio's experience, the placenta presented for demonstration frequently show a decreased thickness and increased surface extension. The danger of placenta prævia lies more in the infection due to frequent examinations, surgical intervention, and tamponing, than in the hæmorrhage. Infection occurs most frequently in anæmic women (as a result of malaria, ankylostomiasis, pernicious anæmia). Tamponing is only justifiable as a temporary means of arrest of hæmorrhage, until the preparations for an operation are completed or the patient has been transferred to an obstetrical institution. He recognizes as methods of treatment: rupture of the amniotic sac, metreurysis, and podalic version. Conservative or Porro's cesarean section must be

considered in placenta prævia centralis. The mortality following cæsarean section is less than that of placenta prævia in the clinic and does not even amount to one-half of that in general practice.

Clivio especially recommends a Porro operation in multiparæ, as it prevents hæmorrhage during the puerperium and in future pregnancies. If the hæmorrhage first appears during the period of labor pains, then the results are essentially better, as generally a marginal placenta prævia is concerned and the uterine os is already dilated or can easily be dilated. In longitudinal positions of the foetus, rupture of the bag of waters is indicated; in transverse positions, version. The foetal mortality is very large in severe cases, as the life of the mother must always be considered first. Many children die as the result of detachment of large portions of the placenta and the delay in delivery caused by the conditions present. If a living and viable foetus can be diagnosed, Clivio recommends that the patient with a placenta prævia be sent to a lying-in hospital to avoid endangering the life of the woman by repeated tamponings.

NEBESKY.

Boni, A.: Treatment of Placenta Prævia (Sulla cura della placenta prævia). *Rass. d'ostetr. e ginec.*, 1913, xxii, 65.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In 68 cases, treated since 1895, in the Gynecological Clinic at Pisa the maternal mortality was 5.88 per cent, the infantile mortality, excluding those who died before the beginning of treatment, 40 per cent.

In lateral placenta prævia, rupture of the membranes generally suffices to stop the hæmorrhage, and also in many cases of partial placenta prævia. In cases where this is not sufficient rapid delivery should be done. If the os is not dilated the best method is Bonnaire's manual dilatation. In rigid os, combined version by Braxton-Hicks method should be substituted. The author has often used Bonnaire's method and has never seen serious cervical tears. Cæsarean section should be reserved for exceptional cases.

COLOMBINO.

Bondy, O.: Bacteriological Examinations in Extraperitoneal Cæsarean Section (Bakteriologische Untersuchungen beim extraperitonealen Kaiserschnitt). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxiii, 582.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The principal indication for the extraperitoneal cæsarean section in preference to the transperitoneal are the "unclean" cases. The author for the past 1½ years has conducted investigations on extraperitoneal cæsarean sections to decide: (1) Whether clinically clean cases show an entire absence of micro-organisms. (2) What is the course of the clinically and bacteriologically clean cases as compared with that of cases with infected liquor amnii. The method employed is as follows: (1) Immediately before operation smears were made from the cervix and from the external os, and (2) immediately after rupture of the membranes smears were made with

cotton applicators from the liquor taken from the cervical incision. Cultures were made on different media. The method and technique are described in detail. He concludes as follows: It is not so important to determine whether bacteria are present or not, as it is to determine the nature and the number of the organisms present. *Staphylococcus albus*, *pseudodiphtheria bacilli*, and also the non-hæmolytic streptococci are relatively harmless. The smear is not to disregard; it is of significance when smear and culture of the same secretion correspond. The number of bacteria in the liquor amnii is of importance.

Cases with ruptured membranes which have been examined outside of the clinic and with temperature above 37.5° — so-called infected cases — always have bacteria in the liquor. In these infected liquor cases the smear always showed numerous bacteria, similar to pus which contains bacteria. There was a marked degree of correspondence between clinical and bacteriological cleanliness, although the clinical course of the cases did not absolutely correspond with the bacteriological cleanliness. The bacteriological examination of the secretion, and especially of the liquor, may be of considerable significance in determining the indication for extraperitoneal section. If the smear contains numerous organisms then the extraperitoneal route is to be preferred over the transperitoneal. If the transperitoneal operation is performed in cases with infected liquor, or if the peritoneum is torn in the extraperitoneal operation, it is perhaps advisable to drain the peritoneal cavity. In extraperitoneal cases of this kind it is advisable to drain the cellular tissue wound.

HAUSER.

Von Mihalkovics, E., and Rosenthal, E.: Clinical and Bacteriological Contributions on the Treatment of Abortion (Klinische und bakteriologische Beiträge zur Abortustherapie). *Monatschr. f. Geburtsh. u. Gynäk.*, 1913, xxxviii, 90.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The lochia of 100 cases of actively treated abortion was carefully examined. Expectant treatment was used only in cases in which abortions were in progress, most of them in the fifth and sixth months of pregnancy. Pathogenic organisms were found in 99 of the cases, but seldom in pure culture; 22 times the hæmolytic streptococcus (twice in pure culture); 44 times the non-hæmolytic streptococcus (no pure culture); 85 times the staphylococcus (11 times pure culture and 4 times hæmolysis).

The course of the cases of hæmolytic streptococci was more favorable than that of the non-hæmolytic streptococci. The hæmolytic power is acquired through adaptation. Schottmüller's staphylococcus putridus was found in only one case. A fatal case of peritonitis due to *B. coli* is fully described. The authors come to the conclusion that the proper treatment of abortion must be based on clinical, not bacteriological, findings. Even finding hæmolytic streptococci in the circulation does not indicate a

bad prognosis. Observations on 875 cases treated actively and 272 treated expectantly lead them to conclude that a moderate degree of active treatment is best; active treatment is indicated, therefore, especially in cases with fever. The results are given in tabular form.

LAMERS.

Waeber, A.: Report of 593 Abortions; with Special Consideration of the Treatment of Febrile Abortions (Bericht über 593 Aborte mit spezieller Berücksichtigung der Therapie des fieberhaften Aborts). *Petersb. med. Ztschr.*, 1913, xiv, 163. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

As we do not at present possess a procedure, clinically applicable, which expresses the intensity of disease changes by the germs present, therefore we cannot utilize a treatment which is based on bacteriology. Only the local disposition is of importance in deciding the degree of severity of the infection, neither the bacteriological findings nor the curettage being of little consequence. The best testimony for this method of procedure is Waeber's 593 afebrile and febrile abortions, which were treated according to the general principles of active therapy, i.e., immediate digital exploration without considering the bacteriological findings of the cervical secretions. The results are excellent and far superior to those of the expectant plan of treatment.

EBELER.

Huntington, J. L.: Relation of the Hospital to the Hygiene of Pregnancy. *Boston M. & S. J.*, 1913, clxix, 763. By Surg., Gynec. & Obst.

Attention is called by the author to the great importance of properly safeguarding the mother and child during the course of pregnancy and to the great value of frequent consultations of the physician with the patient. An outline is presented of the work done by the pregnancy clinic of the Boston Lying-In Hospital and recommendations are given for improvements along the lines of work carried out by the clinic.

Most of the patients come to the clinic between the fifth and sixth month and are subjected to a complete physical examination at the time of entrance. They are then given instructions as to the general care of themselves and also as to the special symptoms which they are expected to report to the physician in charge. Each patient is asked to return to the clinic once every ten days, and in this way a careful follow-up system is formed.

The results of this clinic are extremely satisfactory, as the death rate is relatively low and many cases receive appropriate treatment early for complications which, if allowed to run, might endanger the life of mother or child or of both.

J. H. SKILES.

LABOR AND ITS COMPLICATIONS

Schlapoberski, J.: Rectal Examination During Delivery (Zur Untersuchung per rectum während der Geburt). *Monatschr. f. Geburtsh. u. Gynäk.*, 1913, xxxviii, 258.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author points out the great danger of infection by vaginal examination of women in labor and

shows that, if skillfully done, rectal examination shows the relation of the presenting part to the pelvis, and, in many cases, the degree of opening of the mouth of the uterus, so that vaginal examination is rendered unnecessary. He thinks the method of rectal examination should be taught to midwives. Since he has been using it he has had very good mortality statistics in obstetrical cases.

EISENBACH.

Schwarzwaller: New Manipulations in Brow Presentations (Über den Kegelkugelhandgriff). *Zentralbl. f. Gynäk.*, 1913, xxxv, 1289.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In Liepmann's manipulation for correcting brow presentations, the hand seizes the child's head like a bowling ball and gives it a spiral twist until the small fontanel appears at the mouth of the uterus. The outer hand pushes the forward shoulder to the other side as the head is turned. The author has used this procedure eighteen times, always with good results. Afterwards, the delivery is completed with forceps. There is no danger in the procedure, as in Scanzoni's method of turning the head with the forceps, or in extraction with the brow presentation. One can, at the same time, stretch the vagina and the rigid mouth of the uterus and push the latter back over the child's head.

HÜFFELL.

Mosher, G. C.: The Problem of the Occipito-posterior Position. *Interst. M. J.*, 1913, xx, 1058. By Surg., Gynec. & Obst.

The author reports that in a series of 20 consecutive pregnancies he had 16 cases of the occipito-posterior position. Beyond a doubt, the right occipitoposterior position is one of the greatest *bêtes noires* of obstetrics and a subject which cannot be too much discussed nor too well understood.

After discussing the subject in detail the author reaches the following conclusions:

The landmarks to be kept in the limelight are: (1) The making of an accurate diagnosis; (2) the preserving of the membranes; (3) no treatment in the first stage, if the patient is in good condition, for over 90 per cent have spontaneous rotation; (4) the great desideratum is to encourage good flexion, good pains; (5) in the second stage, with weak pains, first chloral and morphine should be used (Tweedy's plan); (6) manual rotation has resulted in many safe deliveries; (7) if the head is not engaged, version may be indicated; (8) rotation by forceps and reapplication is recommended by New York obstetricians; (9) in 2 per cent of these cases the head must be delivered posteriorly and deep lacerations are to be expected; (10) it is predicted that cesarean section will more frequently be selected, after the patient has been given the test of labor and the attempt found unsuccessful.

EDWARD L. CORNELL.

Pincus, F.: Injuries to the Eye by Forceps Delivery (Über Schädigungen des Auges durch Zangenentbindung). *Klin.-therap. Wchnschr.*, 1913, xxxix, 857.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Injuries to the eyes during birth are rare. Lesions of the cornea, the iris, and the ciliary bodies are sel-

dom seen during spontaneous labors. Retinal hæmorrhages, which are frequently seen near the posterior fundus of the eye, are rapidly absorbed. They are caused by pressure of the skull, compression of the jugular veins, and the changes in the circulation occurring with the first inspiration. Fractures of the orbital cavity, observed in spontaneous labors, endanger the eye. Severe hæmorrhages into the orbital cavity may cause exophthalmos and injuries to the eyes may also be indirectly caused by cerebral lesions. The use of forceps considerably increases the dangers to the infant's life, especially if they are applied to the still high head in the fronto-occipital diameter.

The slipping of the blades, in particular, is accompanied by bad results. Opacities of the conjunctivæ, which are caused by forceps injuries, are either diffuse and smoky, and disappear quickly; or they are deep and band-like and mostly of a permanent nature. The latter opacities are due to lacerations of Descemet's membrane, the escaping humor bringing about processes of inflammation and degeneration; unilateral severe astigmatism with lineal opacity of the cornea is explained in this manner, while severe lacerations of the corneal membrane are occasionally observed.

Paralysis of the facial nerve, which frequently follows forceps deliveries, may cause lagophthalmos and ulceration of the cornea. The pressure of the forceps induces hæmorrhage into the inner eye (anterior chamber, lens, vascular or retinal membrane), and, occasionally, cataracts and luxation of the crystalline lens. Lacerations of the iris, hydrophthalmos, and hæmorrhagic detachment of the retina are very rare complications.

The optic nerve is endangered by basal skull fractures which are not so very rare in forceps deliveries (spicula of bone, pressure by blood clot). The severest injury to the eye, exophthalmos, protrusion of the eyeball, or its traumatic forcible removal, are to be traced back to fractured bones. Lesions of the structures of the neck may be indirectly conducive to disturbances of the eye. Pineus describes a case of paralysis of the sympathetics, caused by pressure of the forceps blade on the cervical ganglion.

HIESS.

PUERPERIUM AND ITS COMPLICATIONS

Nagel: The Blood-Vessels of the Puerperal Uterus (Über die Blutgefäße des puerperalen Uterus). *Tr. Internat. Cong. Med.*, Lond., 1913, Aug.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Nagel has shown by means of a specimen with injected vessels that, contrary to the belief of many authors, the uterine artery sends out branches to the cervix as well as to the body of the uterus. These branches, on both surfaces of the uterus, form anastomoses with those of the opposite side. These transverse anastomoses are connected by longitudinal ones, and send branches into the different muscular layers of the uterus, which again are connected

with each other and form a network consisting of three layers. The course of the ovarian vessels is also plainly to be seen in the specimen. The five ovarian arteries rise from the spermatic artery and break up, before they enter the ovary, into a bundle of tortuous vessels.

Harrar, J. A.: The Treatment of Puerperal Streptococæmia with Intravenous Injections of Magnesium Sulphate. *Am. J. Obst.*, N. Y., 1913, lxi, No. 5.

By Surg., Gynec. & Obst.

Harrar reports the results of the intravenous injection of magnesium sulphate as advocated by Huggins. The treatment was employed in 14 cases of streptococcus infection, with 12 recoveries; in 5 cases in which blood cultures were positive, only one died. A 2 per cent solution of chemically pure magnesium sulphate is prepared with freshly distilled water and is then filtered and sterilized in an autoclave. By simple puncture, 400 ccm. of this solution is injected into a vein. The injections should be repeated every second or third day, according to the course of the infection as revealed by the temperature chart — ordinary supporting measures being meanwhile carried out.

Harrar does not attempt to explain the action of this medication, since, as he says, magnesium sulphate has been shown not to inhibit the growth of streptococci and not to cause a leucocytosis, yet he believes the results obtained in the severe cases which he selected for this treatment are so striking as to justify the further trial of this method of treatment, especially since the method is absolutely harmless.

N. SPROAT HEANEY.

Ricketts, R. M.: Surgery of Puerperal Eclampsia; Suprapubic Cæsarean Section. *Tr. Western Surg. Ass.*, St. Louis, 1913, Dec.

By Surg., Gynec. & Obst.

The deductions of Ricketts from personal letters to surgeons, health officers, and the U. S. Census Bureau at Washington, indicate that 4 deaths occur in the United States annually to every 100,000 persons, as the result of puerperal eclampsia, also 40 infants to every 100,000, thus making 4,000 mothers and 40,000 infants as the sum total based upon 100,000,000 inhabitants. He also shows that frequency and mortality increase in passing from the temperate zone to the equator, and that the frequency and mortality are greater in the black races. He suggests that certain bacteria or parasites found in the warmer climate may be more prone to select the pregnant woman for their habitat, thereby inducing eclampsia, the cause of which has not been fully determined.

Concerning operative measures for eclampsia, his work shows that suprapubic cæsarean section, since 1905, when performed immediately after the first convulsion, without complication, has reduced the mortality of mothers to less than 10 per cent and infants to about 15 per cent. Personal letters from various operators are incorporated in his rather extensive paper as evidence of these facts.

Vogt, E.: The Trendelenburg Operation in Puerperal Pulmonary Embolism (Die klinischen und anatomischen Grundlagen der Trendelenburgschen Operation bei der puerperalen Lungenembolie). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxiii, 137.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The Trendelenburg operation has been but rarely performed; never for puerperal pulmonary embolism. The author reviews 14 fatal cases of puerperal pulmonary embolism which occurred in the Dresden Clinic between 1897 and 1912 with regard to the applicability of the operation. The conditions necessary for its successful performance are: exact diagnosis of the embolism and of its location, immediate operation, and a good condition of the patient. The diagnosis is easy even if no primary thrombosis can be demonstrated clinically. Of the author's 14 cases 3 died suddenly after a normal puerperium. Mahler's sign was present in 5 cases; in 65 per cent exitus occurred without any premonitory symptoms. The embolism can be extracted only if it is lodged at the root or in the main branch of the pulmonary artery. In multiple emboli of the smaller branches removal cannot be considered. In the author's 12 autopsies either the conus or main branch was involved 8 times, in 4 cases the branches of the second or third order were involved. In Ranzis' surgical cases of pulmonary embolism the thrombus was more frequently found in the small branches. In Vogt's cases operation was possible 9 times, 64 per cent, within 15 minutes, 10 times, 71 per cent, within 5 minutes after the attack, whereas in Busch's 22 cases of post-operative embolism it was possible to operate only in 44 per cent of the cases. Puerperal pulmonary embolism occurs in strong individuals before the thirtieth year in 50 per cent of the author's cases and in 45 per cent between the thirtieth and fortieth year. Post-operative embolism, however, occurs in individuals weakened by hæmorrhage, suppuration or neoplasm and usually between the fiftieth and seventieth year. VON MILTNER.

MISCELLANEOUS

Kjölseth, M.: The Signs of Maturity in the New-Born Child (Untersuchungen über die Reifezeichen des neugeborenen Kindes). *Monatschr. f. Geburtsh. u. Gynäk.*, 1913, xxxviii, 216.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The work is not adapted to a short abstract. The author personally examined 1072 new-born babies in regard to numerous factors and comes to the conclusion that no single developmental sign alone, nor even in combination with other signs, is characteristic enough so that the duration of pregnancy can be definitely determined from it. HARM.

Welch, J. E.: Human Serum Treatment for Hæmorrhagic Diseases of the New-Born. *N. Y. St. J. Med.*, 1913, xiii, 588.

By Surg., Gynec. & Obst.

The author reports a typical case of a new-born baby, in good condition in every way, weighing 9

pounds at birth. On the third day bleeding from the vagina was noticed; in a few hours the gums began to bleed, and in 24 hours bright red blood was being passed in the stools. The bleeding continued for three days, when hæmorrhagic spots appeared beneath the skin. The temperature gradually increased until, on the fifth day, it reached 103°. The baby's weight rapidly declined and the voice grew weak. Normal human serum injections were begun at midnight on the fifth day, one ounce being given hypodermatically twice a day for four days. The bleeding began to diminish within a few hours after the first injection, and at the end of 48 hours had ceased entirely, and the child soon regained its normal functions. In some cases the primary bleeding may begin around the cord.

Welch believes that the hæmorrhage in the new-born is due to an altered state of the circulating blood which causes an injury to the endothelial lining of the blood-vessels, thus allowing an escape of the red blood corpuscles into the surrounding tissues — there may or may not be a retarded coagulation time. This substance which circulates in the blood is a toxin and may result from bacteræmia, syphilis, or poisons derived from the gastro-intestinal tract, especially the colon, because in some instances the faeces have the foul odors of decomposition. Emaciated children develop toxins from metabolic products of suboxidation. If the toxin has impaired the capacity of the general body tissues to form thromboplastin enough to neutralize the antithrombin, then the coagulation time is increased.

The hæmorrhages are not controlled by a coagulation process. The human serum performs its function by virtue of its food value, restoring the endothelium quickly to its normal condition.

Welch gives an ounce in each injection subcutaneously, twice daily in moderate bleeders and three times daily in severe cases, using gentle massage during the injection. Intravenous injections are severely condemned, and serum must be used within 48 hours in order to avoid precipitation.

The patients are usually in a condition of shock, with low blood pressure. There is cloudy swelling and some fatty degeneration of the tissues, especially of the liver and kidneys; the complement content of the blood is also lowered.

The use of foreign sera, such as horse serum, is condemned because its administration has been shown to cause focal necrosis of the liver, hyaline blood platelet thrombosis in the capillaries of the lungs, anaphylaxis, and if more than a certain quantity is used the coagulability of the blood is decreased and active hæmorrhage may result.

When whole blood is introduced, the cellular elements have to be slowly absorbed, which consumes much energy.

The direct transfusion of blood is impracticable, because in 50 per cent of cases it is physically impossible and in 25 per cent hæmolysis or thrombo-

sis occurs. This leaves but 25 per cent of the cases benefited by the treatment.

In closing, Welch describes how the serum is collected and prepared.

EUGENE CARY.

Kehrer, E.: Tetany of the New-Born (Über Tetanie Neugeborener). *Jahrb. f. Kinderh.*, 1913, xxvii, 629. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

This is a report of six cases of tetany in the newborn. The diagnosis was positive, as all the typical signs were present. Clonic convulsions were prevalent in three cases; tonic contractions, persisting for a long time, were present in the others. The contractions of the upper extremities were always more pronounced than those of the lower. It was difficult to overcome the spasms of the legs, which were convulsively flexed. Chvostek's facial phenomenon and also Trousseau's arm sign were present, showing increased mechanical irritability of the nerves. Clouding of consciousness was apparent in all the cases, contrary to the usual opinion.

Of interest is the combination of tetany with nephritis in the one case, with sclerodema in two others and with severe icterus in another case. These combinations must be considered as a sign of severe damage to the organism. The simultaneous occurrence of tetany in the newborn and a markedly tetanic condition in the mother is noteworthy. The lime treatment is very successful. An improvement occurred within a few days if sufficiently large doses were given (0.2 calcium chloride 5 to 8 times daily). It may be administered subcutaneously or per rectum. To avoid the formation of an abscess on the hypodermic administration, it should be given in several parts of the body, or Müller-Saxl's calcium gelatin should be used.

BENTHIN.

Jörgensen, G.: Investigations on the Salt Fever of Nurslings (Untersuchungen über Kochsalzfeber bei Säuglingen). *Ugeskr. f. Læger.*, 1913, lxxv, 1219. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Wechselmann's researches on the poisonous nature of old distilled water, and the rôle it plays in the use of salvarsan, induced Jörgensen to investigate whether similar conditions obtained in the fever which appears in nurslings after physiologic salt solution is injected subcutaneously, as Schaps, Finkelstein, and several others have found. He injected salt solution prepared with freshly distilled water, and salt solution which had stood exposed for some time. The results in all cases showed that old solutions produced conditions similar to those described by the above mentioned authors, but nothing similar occurred if a fresh solution was used. Similar results prevailed if a 5 per cent solution of glucose was used instead of a salt solution. He believes, therefore, that the fever reaction after subcutaneous injection of physiologic salt solution is exclusively of bacterial origin.

S. A. GAMMELTOFT.

Henschen, K.: The Diagnostic and Therapeutic Aspiration of the Fontanel in Subdural Hæmatoma in the New-Born (Die diagnostische und therapeutische Fontanellaspisation des subduralen Geburtshämatoms der Neugeborenen). *Zentralbl. f. Gynäk.*, 1913, xxxvii, 925.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author suggests that skulls of infants dying of cerebral hæmatomata be frozen before autopsy is performed to prevent the blood from changing its location so that the exact location of the hæmatoma may be ascertained. He classifies these hæmatomata, as does Seitz, into those of the convexity, supratentorial, and of the base, or infratentorial. In the first group the classical symptoms, restlessness, high tension pulse, tension of the large fontanel, difference in the size of the pupil in unilateral hæmatoma, increased reflexes, paresis, and convulsions, show clearly the increased intracranial pressure due to the gradual formation of the hæmatoma.

In the second group these symptoms are indefinite—soft, pulsating fontanel, somnolence, cyanosis, rigidity of the neck, absence of the cerebral cry, irregular respirations. In these portions of the brain complete myelinization does not occur as early as in the motor cortical areas. The author recommends exploratory puncture of the subdural space from the outer angle of the large fontanel for diagnostic as well as therapeutic purposes in cases of frontal, parietal, or occipital hæmatomata, and cervical puncture in basal hæmorrhages. Usually both may be combined in order to draw off the fluid which is increased by the exudate. If the blood has coagulated, the skull should be opened, as advised by Cushing and Seitz, the clots removed and the vessels ligated. Of 16 patients thus operated upon, 7 were cured. The author reports one such case. He concludes that (1) a subdural hæmatoma which has been removed by operation and closed without drainage, will recur if the tamponing effect of the clot is removed; (2) the hæmatoma may not be found at the puncture, and if not, it is advisable to open the skull on both sides in cases of bilateral convulsions. The technique of the puncture requires a cannula of large caliber. This is introduced obliquely through the outer angle of the large fontanel, the point being upward, the lumen downward.

In cases where an occipital hæmatoma is suspected, the cannula is introduced through the outer edge of the small fontanel, underneath the occipital bone. At the same time the bones of the skull are overlapped at the coronal and lambdoidal sutures by compression. Where craniotomy is performed, the parietal bone is cut at the angle of the fontanel and torn loose from its interstitial membrane. The base of this triangle is broken and the bone is reflected outward with its soft parts. After the dura has been opened and the necessary steps taken, the bone is turned back and the scalp only sutured, not the dura.

MOHR.

Vogt, E.: Duodeno-Jejunal Hernia in the Infant (Hernia duodeno-jejunalis beim Säugling). *Monatschr. f. Geburtsh. u. Gynäk.*, 1913, xxxvii, 817.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The clinical picture was as follows: A healthy new-born infant was put to the breast for the first time 12 hours after birth. Immediately after nursing the infant vomited the entire quantity of milk. Profuse evacuation of meconium followed. Vomiting recurred with each nursing, and after the milk was vomited pure bile followed. The region of the stomach was somewhat distended, and a tumor the size of an apple seemed palpable to the left of the spine. The child gradually became worse and died on the fourth day. Upon opening the abdominal cavity, a thin-walled peritoneal sac the size of a fist was found directly below the stomach and transverse colon, to the left of the spine. Loops of small bowel shone through the sac. The hernial ring formed by the edges of the duodeno-jejunalis fossa was sharp and contained a blood-vessel. There was no definite strangulation of the loops at the entrance and exit of the sac, and none of the loops were adherent to each other. The omentum was well developed. The case was, therefore, a duodeno-jejunal hernia. This is the first case on record in which such a hernia was congenital and caused disturbances immediately after birth.

WIEMER.

Boerma, N. J. A. F.: The Manner of Embedding the Human Embryo (Beitrag zur Kenntnis der Einbettung des menschlichen Eies). *Monatschr. f. Geburtsh. u. Gynäk.*, 1913, xxxvii, 723.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Boerma had the good fortune to obtain an uninjured, well-preserved human egg, $6 \times 3 \times 2\frac{1}{2}$ mm. in size, which he considers one of the smallest embryos in existence. On his preparation he could prove that the intervillous space is not always filled with blood, which confirms the view expressed by Spee in 1896. Fortunately, by accident the direction of the cut surface was parallel to the long axis of the embryo, and the point of attachment was so cut that the yolk sac and its attachment were opposite to the amnion, mesoblast, and chorion in one field.

BAYER.

Meyer, R.: The Relation of the Ovum and the Fertilized Ovum to the Follicle Apparatus; and That of the Corpus Luteum to Menstruation (Über die Beziehung der Eizelle und des befruchteten Eies zum Follikelapparat, sowie des Corpus luteum zur Menstruation). *Arch. f. Gynäk.*, 1913, c, 1.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The fate of the follicle depends upon the fate of the ovum. As a result of maturation the primoidial follicle is converted into the graafian follicle and the theca cells are grouped around the epithelium of the membrana granulosa. An abortive maturation is observed in older fetuses and in smaller children. The monthly maturation and fertilization of the ovum produces an inhibition of maturation

of the other ova and atresia of the follicle. If many ova are in the state of maturation, the secretion of the membrana granulosa produces a cystic degeneration of the ovary. With the expulsion of the matured ovum, the lutein cell border is formed from the epithelium of the membrana granulosa. The proliferation, vascularization, maturation, and retrogression of the corpus luteum go hand in hand with the cyclic changes in the uterine mucosa, the maturation and beginning retrogression occurring at the time of menstruation. The fatty degeneration of the lutein cells in the corpus luteum of pregnancy occurs principally at the end of pregnancy. The latter also contains a larger amount of colloid and calcium than the menstrual corpus luteum. Morphologically it is characterized early by a connective-tissue stroma without hyaline degeneration and by reinforcement of the vascular walls. The onset of menstruation is the latest period for the death of the ovum of the previous ovulation. Meyer observed abortive corpora lutea, showing retrogression before complete development had occurred, and considers them due to premature death of the ova. In addition he observed "partial accessory lutein border formation" in parts of the walls of cystic atresic follicles in a state of development nearly as far advanced as that of the normally developed corpus luteum. This partial accessory lutein border formation was present in pregnancy as well as without it; it is possibly due to a distant action of the ovum of the normal corpus luteum. It is probable that a single living ovum may produce double corpus luteum formation (two corpora lutea in pregnancy). A further anomaly of the epithelial lutein cells is their partial persistence in atresic follicles during pregnancy, which, like the hyperplasia of the theca cells, may be attributed to the influence of the lutein accumulation of the fertilized ovum, which is still more exaggerated in hydatid moles and in chorio-epithelioma. In the latter case the cause must therefore be sought, not in the ovum but in the pathologically changed chorio-epithelium.

WEISHAUPT.

Warthin, A. S.: Miliary Tuberculosis of the Placenta, with Incipient Pulmonary Tuberculosis of the Mother Becoming Latent after Birth of Child. *J. Am. M. Ass.*, 1913, lxi, 1951.

By Surg., Gynec. & Obst.

The author reminds us that it is generally recognized that the influence of pregnancy on maternal tuberculosis lights up pre-existing tubercular lesions in the mother. Authorities have minimized the danger of congenital transmission even in the presence of the recognized placental tuberculosis. During the course of a routine gross and microscopical examination of the placenta, where miliary tuberculosis was demonstrated, there were no miliary thrombi, but a few giant-cells were found, and in every section a small number of tubercle bacilli were also found in caseating tubercles.

The author gives details of the following case: A woman, aged twenty, a domestic, came under his observation for hysteric insanity. She gave a history of scarlet fever and measles and acknowledged a definite gonorrhoeal infection. With the exception of a diagnosis of pregnancy, the physical examination was negative. The family history showed no tubercular infections, and as far as the patient knew she had never been exposed to the disease. After childbirth, an examination of the chest showed a slight increase in vocal fremitus in the right posterior apex; there was a slight impairment on percussion, the expiration was harsh; the pulse 108. The diagnosis showed there was a suspicion of a healed tubercular process in the right apex. Tuberculin tests: Von Pirquet, 25 per cent. In 96 hours there was a slight reaction. A subcutaneous tuberculin test of 2 mg. was given at 10 A.M. the following day. At 2 P.M. there were redness and tenderness at the site of the injection. The highest temperature reached was 99.2°. One month after, she was given 5 mg. Her temperature reached 99.7° the following day at noon, at evening the temperature was normal. The X-ray showed no definite tubercular condition, but there was an increase in root shadows.

The author concludes that the placental miliary tuberculosis was of low virulence. Probably in the third or fourth month of pregnancy a latent tuberculosis existed in the right apex and the bacilli were carried through the blood stream and deposited in the placenta. The patient showed no other tubercular sign on leaving the hospital. The low virulence of the placental infection may be explained by the relative immunity on the part of the placental tissues, or, as the mother failed to develop a miliary tuberculosis, the bacilli may have been of a feebly virulent strain (bovine), or the number of bacilli in the maternal blood stream may have been small and lodged only in the placenta.

ROBERT T. GILLMORE.

Foulkrod, G.: A Consideration of the Reaction of the Human Organism to the Class of Foreign Proteids, Represented by the Syncytial Cell. *Surg., Gynec. & Obst.*, 1913, xvii, 598.

By Surg., Gynec. & Obst.

The author tells of a series of experiments made in attempting to develop a simpler test for pregnancy than the biological test.

The first series consisted of drop cultures of placental tissue in serum from the cord from the same placenta, in the same medium, treated with pregnant blood and with non-pregnant blood and glandular extracts.

The method is complicated and therefore open to many errors. When the cultures were successful, there could be proven some digestion of the placental cells treated with pregnant blood.

In the second series, with antigens made from a full-term placenta, attempts were made to develop a complement-fixation reaction with pregnant

blood. This was unsuccessful, possibly because it has as yet been found impossible to dissolve out the antigen.

Heynemann, T.: The Diagnostic Value of X-Rays in Obstetrics (Die diagnostische Verwertung der Röntgenstrahlen in der Geburtshilfe). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxiii, 92.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The diagnostic value of the X-rays in obstetrics is limited to the study of the maternal pelvis and its characteristics, and to the demonstration of the child during pregnancy. X-ray demonstration of the conjugata vera is not practicable, but those diameters which are difficult to measure directly may be ascertained in this manner. Distance pictures of the pelvic inlet, possible only in the non-pregnant state, are extremely valuable. Stereoscopic pictures are next in value. Recently the X-ray demonstration of the child has been quite successful. Beginning with the seventh month it is possible to obtain in almost every case a picture of the foetal skeleton, but before this time it is exceptional to secure a picture. The same is true of extra-uterine pregnancy. The exposure does no harm so long as it is not unnecessarily prolonged. The X-ray demonstration of pregnancy will not and should not take the place of other methods of examination but should only be used as a supplement to them.

HIRSCH.

Williamson, H.: The Value of Abderhalden's Test for Pregnancy. *J. Obst. & Gynec. Brit. Emp.*, 1913, xxiv, 211.

By Surg., Gynec. & Obst.

The test was applied to 50 patients, 20 of whom were either in the last months of pregnancy or had recently been delivered. Of these 20 the results were positive, whereas in the other 30, non-pregnant cases, the reaction was negative. In 16 cases the test was applied for diagnostic purposes, proving correct in 12 cases, wrong in 2, and doubtful in 2. The author has formulated the following conclusions:

1. It is established that the serum of pregnant women contains a ferment specific to placental albumin.
2. This ferment can be demonstrated from the eighth week of pregnancy until ten days after delivery.
3. Its presence may be demonstrated by the polarimeter or dialysis.
4. The former method is the more reliable, in that the sources of error are fewer.
5. The accuracy of the test depends upon the most scrupulous care in details, and only in the hands of experts can the results be relied upon.
6. The ferment is found only when chorionic tissue is present in the body.
7. It is probable that under other conditions the color reactions and optical effects produced by the test may be simulated.
8. Most of the common sources of error have

already been detected, and in the near future the test may be expected to give more reliable results.

CAREY CULBERTSON.

Sunde, A.: Abderhalden's Serological Diagnosis of Pregnancy (Die Abderhaldensche serologische Reaktion der Schwangerschaft). *Norsk. Mag. f. Lægevidensk.*, Christiania, 1913, lxxiv, 1234.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

A detailed description of the theoretic principles and technique of the procedure is given with a report of 83 cases examined by the method of dialysis. In 75 cases the clinical results confirmed the diagnosis. Eight times it was positive when pregnancy did not exist—twice in men and six times in women who certainly were not pregnant. The author, however, thinks the method is absolutely reliable, and attributes these failures to a lack of care in washing out the placenta. It is absolutely necessary to follow Abderhalden's directions very carefully. He did not try the optic method.

HORN.

Stoeckel: Abderhalden's Pregnancy Reaction (Über die Abderhaldensche Schwangerschaftsreaktion). *München. med. Wchnschr.*, 1913, lx, 1741.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The diagnosis of pregnancy during its early months is at times very difficult, especially when the pregnancy is extra-uterine, and yet it is here that a diagnosis is of extreme importance. The Abderhalden reaction offers some hope of making a positive early diagnosis. The author gives a short description of the reaction and the principles upon which it is based. The polariscopic method is only adapted for clinics at the present time. The dialyzation method has been tried in many cases and by many men, but Abderhalden's results have not been completely corroborated. The author reports 130 cases in which the dialyzation method was tried and the results of which were published by Behne. According to these results the proof of a specific reaction is still lacking. Errors of technique will be investigated later. Stoeckel is of the opinion that Abderhalden's reaction at the present time is not of much significance for general practice nor for the forensic side of obstetrics. On the other hand, he is convinced that by both of the methods new insight will be gained into the realm of the biologic relations existing between mother and child, relations hitherto but poorly understood.

RUNGE.

Jonas, W.: Contribution to the Clinical Value of the Abderhalden Serum Reaction of Pregnancy; the Dialysis Method (Beiträge zur klinischen Verwertbarkeit der Abderhaldenschen Schwangerschaftsreaktion; Dialysierverfahren). *Deutsche med. Wchnschr.*, 1913, xxxix, 1099.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author performed the serum reaction of Abderhalden in 50 cases of pregnancy and gynecologic diseases and found the reaction incorrect in

two instances. If in place of the serum, blood plasma was employed, the reaction was negative even when pregnancy existed. When carcinoma serum and carcinoma tissue were employed, the latter was split up in five out of seven cases.

BOXER.

Schäfer, P.: Abderhalden's Ferment Reaction in the Serum of Pregnant Women (Abderhaldensche Fermentnachweis im Serum von Schwangeren). *Berl. klin. Wchnschr.*, 1913, l, 1605.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

A report of results obtained at the Royal University Gynecological Clinic (Kgl. Universitäts-Frauenklinik) with Abderhalden's reaction for pregnancy shows that 186 cases were examined by the method of dialysis, and 108 of them at the same time by the optic method. The latter method is more easily carried out and is less subject to error. Of 72 pregnant women examined, from the first to the tenth month, only two reacted negatively, one with hyperemesis, and one with pregnancy in a bicornuate uterus. The diagnosis of pregnancy was made in one woman's case eight days after the cessation of the menses. There were numerous mistaken positive diagnoses in cases of myoma and carcinoma of the cervix; with the optic method, only one error was made in a case of myoma. On the whole, the Abderhalden method is a valuable addition to our means of diagnosis.

HAMM.

Linzenmeier, G.: The Calcium Content of the Blood During Pregnancy (Der Kalkgehalt des Blutes in der Schwangerschaft). *Zentralbl. f. Gynäk.*, 1913, xxxvii, 958.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author confirms Kehrer's observation that the quantity of lime in the blood of the pregnant woman is not decreased but increased. However, in contrast to Kehrer, he did not find a decrease of the quantity of calcium in the blood of eclamptics. His belief that the amount of lime which the foetus needs for the construction of the skeleton is brought from the mother by way of the blood stream is confirmed by the findings in virgin and egg-laying geese. The latter always have more lime in the blood. He adds a small percentage table of the lime contained in most of the ordinary foodstuffs and emphasizes the value of a correctly balanced food. He adds lime in excess as a prophylactic against caries of the teeth, which so frequently occurs during pregnancy.

VOIGT.

Hinselmann, H.: So-Called Physiological Pregnancy Thrombosis of Vessels at the Placental Site (Die angebliche, physiologische Schwangerschaftsthorbose von Gefäßen der uterinen Placentarstelle). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxiii, 146.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Thrombosis of blood-vessels at the place of placental insertion in the uterus were not found in numerous examinations of gravid and two recent puerperal uteri. Many formations formerly thought

to be thrombi are only necrotic maternal tissue produced by the interstitial implantation of the ovum. Necrobiotic maternal cells and cell débris are transported by the blood and lymph stream. This fact is of importance for the physiology and pathology of pregnancy. HIRSCH.

Löfqvist, R.: The Importance of Pituitrin in Obstetrics (Die Bedeutung des Pituitrins in der Geburtshilfe). *Versamml. d. Nord. chir. Vereins*, Kopenh., 1913.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

From the extensive literature on pituitrin, Löfqvist concludes that pituitrin induces labor pains; however, many existing facts contradict this conclusion. The most important is that the action of pituitrin is very weak in the beginning of labor, but develops to its greatest strength toward the termination, when abdominal pressure plays the most important rôle under normal conditions. The published cases are mostly of such a nature as to withstand critical investigation.

The author attempted to study the action of pituitrin in women at full term, as well as during labor, and arrived at the conclusion that pituitrin excites uterine contractions which are, however, not identical with physiological pains. In cases in which the action is marked, a tendency to tetanic contractions of the uterus can be observed. They may be of five, ten, or fifteen minutes' duration and the uterine muscle may not completely relax in the intervals.

If pituitrin becomes active during a physiological labor pain, then labor also progresses during the first period. The contractions secured by pituitrin alone cannot dilate the cervix without other assistance. The tetanic contractions, however, may in a surprising manner hasten labor, after the cervical canal is open, especially in multiparæ with well dilated soft parts. The pathological character of the pituitrin contractions may best be demonstrated by the measurement of the intra-uterine pressure, as has been proved by other investigators.

Hofstätter, R.: Failures and Injuries Resulting from the Administration of Hypophyseal Extract (Über Misserfolge und Schädigungen durch die Hypophysen Medikation). *Monatschr. f. Geburtsh. u. Gynäk.*, 1913, xxxviii, 142.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author reports the failures and injuries due to hypophysis medication. Pituitrin may be employed in acute cases (during and after labor) and in chronic cases (atony of the bladder, gynecologic hæmorrhages, amenorrhœa, hypoplasias, castration, and osteomalacia). No disturbances due to the administration of hypophyseal extract were observed. Bad results are possible on account of lack of a physiologic standard, lack of uniformity in the preparation and incorrect dosage and time of administration. The action of the extract during the first stage of labor is uncertain, but on the whole not dangerous. Increased uterine contractions,

which may lead to tetany, are indicated only if part of the child is fixed in the lower uterine segment.

We must be warned against employing pituitrin as a means of hastening labor for convenience' sake. In incomplete abortions pituitrin is not indicated. Hofstätter denies the view of Patek that it possesses a specific action on the cervix. The induction of labor or premature labor by means of pituitrin is only occasionally successful. There is no danger of increased hæmorrhage after delivery due to its use; on the contrary a tonic effect may be observed even after delivery. Increased intra-uterine asphyxia of the child is occasionally observed, but only rarely. In all cases of complete or partial failure of compensation and in marked arteriosclerosis or nervousness, pituitrin, like all substances which increase blood pressure, must be employed with caution. BIENENFELD.

Mayer, A.: Dangers Incident to the Use of the Momburg Tube (Über Gefahren des Momburgschen Schlauches). *Gynäk. Rundschau*, 1913, vii, 391.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The application of the Momburg tube may cause injury. (1) The thin walled vena cava may be compressed much sooner and more completely than the rigid aorta, especially in sclerosis. As a result thereof, the patient may bleed to death into the vessels of the lower half of the body. This has been proven at autopsy. (2) It is difficult to include the ovarian artery and compress it. The aorta would have to be compressed above the renal to include it. This would shut off the renal vessels and (3) cause injury to the kidneys, especially in nephroptosis. Experiments conducted on rabbits have shown that exclusion of the renal vessels from the circulation causes anatomical kidney changes consisting in circulatory disturbances and degenerative processes. Autopsy in a fatal case of placenta prævia showed a definite hæmatoma of the kidney. Therefore a descended kidney would have to be replaced before applying the tube. Compression of the ureter also injures the kidney function, a complete anuria developing. Healthy kidneys may recover after temporary compression of the ureter, but diseases of the kidneys will be aggravated. (4) Cardiac injury may result following the severe interference with the circulation incident to the sudden exclusion of the circulation of the lower half of the body. This was observed in experiments on rabbits and on the human being. (5) The intestines may also be injured. In one case an extreme meteorism developed. The tube should not be used unless there are absolute indications for it. HERZOG.

Niklas, F.: Placental Hormones and the Use of Placental Extracts as Lactagogues (Zur Frage der Placentarhormone und der Verwendung von Placentarsubstanzen als Lactagoga). *Monatschr. f. Geburtsh. u. Gynäk.*, 1913, xxxviii, 60.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The secretion of the breasts is not caused by mechanical and nervous stimuli, but only by chem-

ical stimulation. The nutritive theory also must be rejected, because the nutritive substances produced during pregnancy can maintain a secretion only for a limited time. The theory of the action of hormones is more probable. These hormones may be derived from (1) the ovary, (2) the ovum (foetus and placenta), or (3) the mammary glands themselves. The author demonstrated by his investigations that the ovum must be considered as the chief source of the hormone. He produced a secretion of milk, lasting only a short time following hyperplasia of the mammary glands in virgin as well as maternal animals, by the intravenous injection of a placental extract.

A flooding of the maternal blood with hormones probably occurs physiologically as a result of labor pains, which, after a certain incubation period, is followed by increased activity of the breasts. Nothing is known of the nature of these hormones, but they are apparently albuminoid substances formed in the placenta. The question as to whether an insufficiently secreting breast could not be stimulated to increased activity by these substances is indefinitely answered. Experiments were made with wet-nurses by the internal administration of tablets of placental secretion. This caused an increase in the flow of milk, but only to a slight degree. The subcutaneous injection of placental extract proved to be very painful, and is therefore out of the question. Experiment in the line of intravenous administration remains to be undertaken.

HERZOG.

La Torre: Is There a Certain Type of Uterine Musculature from an Obstetrical Point of View (Gibt es vom geburtshilflichen Standpunkt einen bestimmten Typus der Uterusmuskulatur)? *Tr. Internat. Cong. Med.*, Lond., 1913, Aug.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Examination of the puerperal uterus does not give a satisfactory answer to the above question since it shows an abnormally hypertrophied condition of the organ and only microscopic examination of the non-functioning uterus could settle it. Torre made such a microscopic study of the uterus of the children and animals and came to the conclusion that all the muscle bundles are interwoven and met — as Helie asserts — divided into three separate layers. The infantile uterus is very similar to that of animals (dogs and rabbits). His statements are demonstrated by microphotographs.

Küster, H.: Intra-Uterine Amputation of the Femur with Occlusion of the Urethra and Rectum (Intrauterine Amputation des Oberschenkels mit Verschluss von Harnröhre und Mastdarm). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxiii, 554.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author describes a foetus which was delivered spontaneously by a healthy primipara at full term and died a few hours after birth. The entire left lower extremity was absent. A bright red, irregularly outlined, granulating area was found in its place. The left half of the external genitalia, the

external opening of the urethra, and the anus were absent. The abdomen was enormously distended. A sausage-shaped, hard mass crossed the middle of the granulating area parallel to the longitudinal axis of the body; it was the occluded and dilated rectum. The granulations extended externally over the muscles of the pelvis and the lower abdomen. On post-mortem examination the urinary bladder was found very much distended, reaching up to the border of the liver, which was abnormally high. The urethra was 1 cm. long, not dilated, and terminated in a blind pouch beneath the skin. The rectum and sigmoid were enormously distended with flatus and meconium. A rupture threatened to take place between the rectum and sigmoid flexure. The other abdominal organs were normal, also the internal female genital organs.

The probable cause was an amniotic band. The latter was formed between the legs in the genital cleft. The time of amputation was between the end of the third month and the end of the fifth or sixth month. The placenta had been examined superficially and thrown away by the midwife. The amputated leg may have been lost with the blood. The defective epidermization of the granulating surface was due to an adhesion of the wound with the amniotic sac. The adhesions broke during labor, which fact was verified microscopically. HERZOG.

Schröder, H.: The Late Results of Obstetric Procedure (Die Späterfolge geburtshilflichen Handelns). *Monatschr. f. d. ges. Geburtsh. u. Gynäk.*, 1913, xxxviii, 129.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Schröder investigated the material at the Bonner Gynecologic Clinic from 1893 to 1905 in regard to the fate of the children delivered by caesarean section or premature labor for contracted pelvis. The investigations extend to 1¼ years after birth. He showed that of the children delivered by premature labor, the maternal mortality was 2.54 per cent, and the foetal mortality 43.69 per cent before leaving the clinic. Over one-half of the children, or up to 60.5 per cent, died within 1¼ years. The figures are a little better for caesarean section. The maternal mortality here was 6.57 per cent and the foetal mortality incident to delivery was 12.5 per cent; the number of children who died within 1¼ years amounted to 42.5 per cent. The principal cause of this sad condition of affairs, according to the author, is poverty of the parents and the lack of breast feeding. Remedy for this condition would have to be applied in that direction if success is to be attained. The statistical investigation also showed that the fate of illegitimate children is about the same as that of children born in wedlock. The author believes, in view of these bad results, that in cases of contracted pelvis the life of the mother ought to be considered first. Craniotomy should be performed on the living child rather than subject the mother to a serious obstetrical operation, which, in many cases, will decrease her working capacity and at best is doubtful in its results.

WIEMER.

GENITO-URINARY SURGERY

KIDNEY AND URETER

Pilcher, P. M.: Exactness in Diagnosis and Conservation in Treatment of Renal Calculus. *Ann. Surg.*, Phila., 1913, lviii, 616.

By Surg., Gynec. & Obst.

The author believes that the ureter opening, as a rule, shows enough changes to determine which kidney is affected. If a calculus is so small as not to be indicated by repeated X-ray examinations it is probably small enough to pass without surgical interference. The radiograph helps materially in determining the type of operation. If the urine is loaded with calcium oxalate crystals, and the X-ray shows a stone below the free border of the ribs, a lumbar incision is indicated. If the radiograph shows a triangular stone, with the apex pointing inward or downward, and there is an excess of phosphates in the urine, such a stone is phosphatic, and operation is indicated.

The author says that there are more renal calculi passed into the bladder and through the urethra than ever remain imprisoned in the kidney. Pyelolithotomy is indicated when the stone is within the pelvis of the kidney or the first portion of the ureter or in the lower calices of the kidney, provided the pelvis is dilated. Nephrotomy is indicated if the kidney is worth saving and suppurative pyelonephritis is not present. Urinary fistula does not follow operation provided the ureter is unobstructed.

B. S. BARRINGER.

Lejars and Rubens-Duval: Congenital, Non-Pathological Prolapsed Kidney (Contribution à l'étude des reins ectopiques congénitaux non-pathologiques). *Rev. de chir.*, 1913, xlviii, 544.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The authors have had two cases of congenital ectopic kidney, and in connection with the description of them call attention to the errors of diagnosis to which they may give rise and to the histological lesions and signs of degeneration found in them.

A woman of 32 was sent to the hospital for pain in the right side of the abdomen and vomiting. These crises recurred twice in three months and a diagnosis was made of appendicitis and then of cyst of the ovary or of fibroma with a twisted pedicle. On operation a prolapsed kidney as large as a fist was found and removed, followed by recovery.

A woman of 39 had suffered for a year with attacks of pain in the left side of the abdomen, accompanied several times by intestinal occlusion. Operation was performed with a probable diagnosis of tumor of the colon. An ectopic kidney was found and removed and the patient recovered.

The first kidney was ovoid in form and had small

yellow spots scattered over it; these yellow spots corresponded to masses of clear cells located in the interstitial connective tissue of the kidney, at places where it had become sclerotic. There were bands of sclerosis radiating from the medullary substance to the capsule. Glomeruli and urinary tubules both shared in this process of fibrous transformation. The clear cells, scattered through this thickened connective tissue, were round or polyhedral in form, made up of a finely vascular or areolar protoplasm. The nuclei were round in the small cells; smaller, angular, or star-shaped in the larger ones. These cells resembled inclusions of suprarenal tissue.

However, their location exclusively in the zones of sclerosis and their substitution for the cells of the renal tubules would lead one to consider them modified kidney cells; they were not cells undergoing degeneration; they were multiplying and were filled with products of cellular activity. The authors think that these cells were becoming adapted to a new function; interfered with in their function of external secretion, they were functioning as cells with an internal secretion. Carrying this hypothesis further they conclude that the new-growth of clear cells, considered a hypernephroma, is often only a malignant degeneration of the internal secretory element of the kidney.

In the second kidney there was a very marked dilatation of the entire system of urinary tubules, a slight beginning sclerosis, and a development of clear interstitial cells, which was as yet only slightly advanced. They have collected from the literature a number of cases of errors of diagnosis which ectopic kidneys have given rise to: tumors of the adnexa, cyst, of the ovary, salpingitis, fibrosis, hæmatometria, which have been found on operation to be ectopic kidneys. When genital anomalies are present the character of the tumor should awaken a suspicion of ectopic kidney.

Nephrectomy is the preferable operation. However, operation often has to be performed at once and nephrectomy without a preceding functional examination of the kidney is dangerous. It would be better to delay nephrectomy until the functional capacity of the other kidney is determined. J. OKINCZYC.

Rupert, R. R.: Irregular Kidney Vessels Found in 50 Cadavers. *Surg., Gynec. & Obst.*, 1913, xvii, 580.

By Surg., Gynec. & Obst.

In the original article Rupert makes this statement: "With few exceptions, text-books evade references to anomalies of vascularization of any gland. The literature is somewhat meager, as the author of each article reports cases 'in which unexpected anomalies of the arteries usually were

found incident to renal operations,' and statistics are based upon surgical cases where only the blood supply of one kidney is seen. Of 50 cadavers, 35 cadavers (70 per cent) showed either a uni- or a bilateral anomaly of the artery or the vein on both.

"From a surgical standpoint, with two like organs in the body," the author believes that "statistics should be based upon the number of cadavers or patients in which such anomalies are found and not upon the number of organs," because both organs (kidneys) are never removed.

The author found:

13 cadavers with anomaly on left side.

11 cadavers with anomaly on right side.

10 cadavers with anomaly on both sides.

Only one cadaver had anomalous veins, having two on the right, both leaving the hilum of the kidney.

The author's conclusions are that: (1) Anomalous renal vessels are more frequent than generally supposed, especially in the arteries; and (2) veins are as important as arteries, for, on account of the thinness of their walls and absence of pulsation, they are difficult to differentiate from an adhesion unless within the field of vision.

Krotoszyner: Value of Pyelography for the Diagnosis of Hydronephrosis. *Calif. St. J. Med.*, 1913, xi, 435.
By Surg., Gynec. & Obst.

The author shows the value and use of pyelography in three cases of hydronephrosis.

In the first case, a tentative diagnosis of left-sided nephritis was made and, from the comparatively slight deterioration of renal function, a nephrectomy seemed to be contra-indicated. Pyelography made the correct diagnosis; and nephrectomy, as treatment, was the proper procedure. In the second, a diagnosis of left-sided pyonephrosis, a sequel to a probably congenital hydronephrosis, could have been fairly established by other urological methods, yet pyelography indicated the extension of the destructive process, clearly pointing to the necessity of a nephrectomy and not a preliminary nephrotomy. In the third case, pyelography demonstrated a normal renal pelvis and calices, except a slight dilatation of the lowest one, and with these pyelographic findings operative interference was not advised; in a short time, although two skiagrams proved negative, a small calculus was passed.

Krotoszyner's work was not satisfactory until he began using shadow-casting solutions of comparatively high concentration, as a 25 per cent solution of cagentos. He uses the moderate Trendelenburg position to permit the solution to gravitate into all renal cavities, resting, and the taking of a radiograph while the injection is continued under gentle pressure. As a rule, he uses 8 to 15 ccm., although one ounce has been used in some cases.

The following are his conclusions: (1) The diagnosis of hydronephrosis is materially aided and, in some instances, is only feasible by pyelography. (2) It offers a valuable guide to the method of treat-

ment or operative procedure to be followed in a given case. (3) This method should be applied by a skilled operator and only on the basis of strict indications.

LOUIS GROSS.

Bernstein, H. S.: The Incidence of Renal Involvement in Pulmonary Tuberculosis. *Albany M. Ann.*, 1913, xxxiv, 665. By Surg., Gynec. & Obst.

In order to prove a tubercle bacilluria without apparent tubercular involvement of the kidneys, a series of one hundred patients were selected in which the tubercle bacillus had been isolated in the sputum. A morning specimen of urine was obtained and allowed to stand for two hours, the upper layers being then decanted into a beaker, while the lower layers were centrifuged. The centrifugalized sediments were examined for tubercle bacilli and then injected into guinea pigs — two pigs for each patient. One guinea pig was killed and examined at the end of four weeks, while the second was examined at eight weeks.

Of this series, ten were positive for tuberculosis, the far advanced cases of pulmonary tuberculosis providing the larger number. Six specimens of urine did not show albumin or casts, two of which, however, did show some pus-cells; four showed albumin, one containing a marked number of pus-cells. Three cases were cystoscoped and in each case the ureteral urines were positive for tubercle bacilli in one or both kidneys. The post-mortem records of the Bender Hygienic Laboratory show three hundred and twenty-one cases of pulmonary tuberculosis with ten tubercular kidneys, or 3.4 per cent.

In conclusion, therefore, 10 per cent of the cases examined gave positive guinea pig results. Urinary symptoms were absent; subsequent inoculation in five cases gave the same findings; six of the urines were negative for albumin; three sediments contained pus. Cystoscopy corroborated the findings of tubercle bacilli in three cases in urine directly from the kidney. Post-mortem records showed 3.4 per cent of kidney involvement in pulmonary tuberculosis.

C. D. PICKRELL.

Moskaleff, M. N.: Etiology of Pyelonephritis (Zur Lehre der Pyelonephritisätiologie). *Kijew. Univ. Iswestija.*, 1913, liii, 1.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

In order to determine the causative organisms in pyelonephritis, the author examined 29 cases bacteriologically, and isolated 16 different species of bacteria, among which bacterium coli communis, proteus, staphylococcus aureus and albus, and streptococcus were shown to be pathological by animal experiments. The one most frequently demonstrated was the colon bacillus, which agrees with the findings of other authors. Sixty-five rabbits and guinea pigs were infected with the bacteria from cases of pyelonephritis and in 42 of the cases the kidneys were examined histologically. The conclusions are:

1. There is no specific microbe for pyelonephritis. It is caused by the ordinary pus-producing organisms which find particularly favorable soil for development in the local conditions of the organ affected.

2. There are four modes of infection for the kidney: by direct injury, hæmatogenous, lymphogenous, and infection ascending from the bladder.

In 11 experiments, the results in 6 justify the conclusion that a single injection of pus-producing organisms into the ureter as far as the kidney pelvis does not produce pyelonephritis. In 8 experiments, 6 were positive and led to the conclusion that the insertion of pus-producing organisms into the ureter and closing it causes pyelonephritis of the affected side. In 33 experiments in which pus-producing organisms were injected into the bladder: in 9 cases there was one injection with continuous closure of the urethra, in 8 cases one injection with temporary closure of the urethra, in 5 cases one injection with the flow of urine not interfered with, in 11 cases repeated injections with temporary closure of the urethra each time.

These experiments showed that the longer the flow of urine was interfered with, the earlier and more extensive were the changes in the kidney parenchyma. But the three series of experiments show that there is no ascending pyelonephritis in the true sense of the word. By inflammatory processes in the ureter or bladder wall they are rendered easily penetrable by the bacteria which enter the lymph spaces and from them the lymphatic system.

Stasis in the lymphatics may cause a retrograde transference to the lymph-spaces of the kidneys or, as is more probable, they may be carried through the thoracic duct into the blood stream and enter the kidney through the blood. Yet from the primary inflammatory focus in the bladder or ureter small thrombi may cause direct metastases in the kidney without the intervention of the lymphatic system. Among the conditions which favor kidney infection the author tested the effect of trauma. By means of an apparatus arranged by the author, the animals were given uniform blows over the left kidney through the abdominal wall. After this the infectious material was applied. Fifteen times it was given intravenously: both kidneys were equally affected, the trauma apparently making no difference; 11 times it was given through the injured skin: here the kidney affection seemed to select the injured side; 26 times it was given subcutaneously and the injured kidney was the seat of the resulting inflammation. He tested the influence of ligation of the ureter in two ways; in 14 cases the animal was infected intravenously, in 10 cases, subcutaneously, and the kidney with the ligated ureter proved to be more susceptible to infection.

STROMBERG.

Kretschmer, H. L.: Pyelitis Follicularis. *Surg., Gynec. & Obst.*, 1913, xvii, 612.

By Surg., Gynec. & Obst.

The author tells of a rare form of pyelitis, the pathological condition of which has also been re-

ported under the name of pyelitis granulosa. His report is based on one case and a review of the literature on the subject, of which the author is able to collect only seven clinical cases, which, with his reported case, makes a total of eight cases reported to date.

The patient had been treated for malaria for a long time. Cystoscopic examination revealed a pus infection in the left kidney, and a nephrectomy was carried out. The kidney removed at operation showed two unusually interesting conditions as follows: (1) An arrested development of the kidney, the entire kidney weighing only 15 grams. (2) The kidney pelvis showed a granular condition due to the presence of small nodules beneath the mucous membrane. The nodules were excised, and careful histological examination proved them to be true lymph-follicles, as they showed the presence of germinal centers.

The article considers the associated conditions found in these eight cases and the pathogenesis also. The views of pathologists are given in detail, as well as the views of Taddei, Solieri, Zanellini, Loewenhardt, Paschkis, and Von Frisch. In the three cases reported by Von Frisch and in the cases of Taddei, Solieri, and Zanellini, hæmaturia was a prominent symptom. In the author's case the hæmaturia was absent. In one of Von Frisch's cases and in the author's case the presence of a colon bacillus infection was demonstrated.

Stevens: Partial Bilateral Nephrectomy in a Case of Calculous Pyonephrosis. *Calif. St. J. Med.*, 1913, xi, 447.
By Surg., Gynec. & Obst.

The author details minutely the history of this unique case, to prove to what extent renal tissue may be removed and how little of the parenchyma is required for satisfactory function.

The patient was a barber, 19 years old, who had complained for six months of pain in the left hypochondrium; the urine was cloudy; there were pus-cells and blood-cells, but no subjective urinary symptoms. Cystoscopy warranted a diagnosis of chronic cystitis; ureteral catheterization showed cloudy urine from both ureters, more marked on the right side; microscopically, the right urine contained a larger amount of albumin than the left, a few blood-cells and degenerated round epithelial cells on both sides; bacteriologically, the colon bacilli; functional tests demonstrated decrease, especially on the right side; radiography showed eight typical stone shadows on the right side and six on the left; blood cryoscopy 0.556.

As the right kidney appeared to be in a worse condition it was attacked first, and, on exposure, both poles were found to be mere shells with a small amount of healthy tissue in the center. The diseased portion was removed with the major portion of the enormously dilated pelvis. Two months later the left side was resected in the same manner. The patient now urinates at regular intervals. The urine is almost clear but contains a small amount of

pus, visible microscopically. The kidney pelvises were washed with a light silver solution at intervals of 10 to 14 days with good results. The author failed to find any report in the literature of bilateral resections.

LOUIS GROSS.

Krotoszyner, M.: Untoward Results of Nephrolithotomy. *J. Am. M. Ass.*, 1913, lxi, 1688.

By Surg., Gynec. & Obst.

The author of this paper states that the mortality of nephrolithotomy, according to collected statistics from the clinical centers of the world, is less than 4 per cent in aseptic and moderately infected stone kidneys. According to Hahn and Cunningham, the mortality of 222 cases, 135 of which were aseptic and 87 infected, was 2.2 and 18.3 per cent, respectively. As to hæmorrhage after nephrolithotomy, the author quotes one case from Israel's clinic of acute hæmorrhage setting in within twenty-four hours. Much more frequent, however, is late hæmorrhage, which occurs several days or even weeks after the operation, occasionally preceded by moderate or insignificant bleeding into the bladder or the wound.

Another complication of less frequency is perirenal infection and septic nephritis. In regard to fistula as a complication, he says: "While closure of the post-operative fistula may follow expectant or conservative local treatment, secondary nephrectomy is nevertheless, in many instances, the only effective means of relieving the patient from his distressing condition. It should be performed without too long delay."

He commends the practice of pyelotomy and primary nephrectomy in preference to nephrolithotomy. The obvious advantages over the latter operation are preservation of the kidney operated on, good view of the renal calices and pelvis, and comparatively small functional impairment. While pyelotomy is only applicable in the comparatively small group of aseptic and moderately infected cases, primary nephrectomy ought to gain more and more ground as a curative method of advanced pyonephrotic stone kidneys, in which the other organ is found to be functionally and anatomically intact. At Israel's clinic the operative mortality for nephrotomy in infected cases was double as large as that of primary nephrectomy, 22 per cent against 11 per cent.

I. S. KOLL.

Caulk, J. R.: Ureterovesical Cysts; an Operative Procedure for Their Relief. *J. Am. M. Ass.*, 1913, lxi, 1685.

By Surg., Gynec. & Obst.

Before the advent of the cystoscope the subject of ureterovesical cysts, cystic dilations of the lower ureter, or intravesical ballooning was one that was little known. Until 1898 Englisch was able to collect but sixteen authentic cases and Adrian, in 1905, reported fifty-two cases collected from the literature of this subject. These observations were mostly necropsy findings or accidental discoveries during the course of vesical operations. Of the fifty-two cases which Adrian collected, only twelve were

diagnosed correctly during life. Since the advent of the cystoscope, and more thorough training in the interpretation of cystoscopic pictures, this condition is becoming more generally recognized. The literature seems to show that these dilations are more frequent in females than in males. Englisch in his series reports ten cases in females and six in males. Cases have been observed in patients ranging from six weeks to sixty-two years of age. All authors are agreed that the cyst wall is composed of two mucous layers, that of the bladder and that of the ureter. A controversy has arisen concerning the intervening structure. The majority of authorities have found only fibrous tissue between the two mucous surfaces; a few, however, have noticed muscle tissue. Stones have also been reported within the cyst (Freyer).

The operations reported in the literature have been of two kinds, the suprapubic and the endovesical.

The suprapubic operations which have been described have been: (1) splitting the cyst and suturing lengthwise the two mucous surfaces, as in Adrian's case; (2) the resection of cysts with a circular suture of the two mucous surfaces; (3) the hernia operation described by Young and utilized in his case of a ureterovesical cyst within a diverticulum.

The endovesical operations have consisted in the splitting of the cyst at its ureteral orifice by means of a knife or scissors. Cases of this kind have been reported by Kelly, Pawlik, Albarran, Barringer, and others. Results in some of these cases have been satisfactory. The objection to this procedure has been that recontraction of the orifice has been frequent and rapid. Pawlik and Kelly mention this in their report and advise repeated dilatations similar to those utilized in cases of urethral stricture. Dilatation was done 112 times in Pawlik's case to prevent contraction.

A summary of the features of interest of six cases treated by the author is as follows: The ages ranged from 26 to 46 years. Five of the patients were women and one was a man. Five of the cysts were located on the right side, one on the left side. One was associated with double ureter and seemed to be the only case which could be definitely classified as of congenital origin; the other five cases presented evidences sufficiently clear to allow them to be tabulated as acquired abnormalities. Of these five cases, one was secondary to a ureterovesical anastomosis; one resulted from inflammatory changes around the ureteral orifice secondary to tuberculosis; one appeared in the course of a long-standing calculus pyonephrosis; one presented the history of the passage of two stones from the kidney; and the last, the most recent case, was secondary to a healed ulcer around the orifice, due to a colon cystitis. It seems convincing, therefore, that not all ureterovesical cysts are congenital, as some authors state; on the contrary, they seem more frequently to be acquired.

The endovesical operations which have been

employed have consisted merely in slitting the orifice of the ureter; but all the observers who have utilized this method have reported rapid reformation of the stricture at the orifice, as occurred in case one, with the first operation. Several writers state that this slitting operation is a difficult procedure. The author says, however, that even the resection of the cyst under the guidance of the cystoscope was executed simply and offered no particular obstacles. In the male the removal could be done by means of a rongeur cystoscope.

The author is of the opinion that the endovesical slitting operation offers no permanent benefit. In two of his cases the patients have undergone nephrectomy, one for tuberculosis of the kidney, the other for a calculous pyonephrosis. The ureterovesical cyst had entirely disappeared following the nephrectomy for tuberculosis. The operation which was employed in cases one and two, the total resection of the cyst under the guidance of the cystoscope, is a method which seems to offer very satisfactory results. One of the patients remained well for a year without evidences of obstruction. The other patient has remained perfectly well for two years and has a patent orifice through which a No. 7 ureteral catheter passes easily.

The suprapubic operations, whether slitting the orifice longitudinally with suture of the two mucous surfaces, or the circular amputation of the cyst with suture of the two surfaces, or the hernia operation employed by Young in his case, are more extensive and more radical procedures and possibly offer better curative results. The author is of the opinion, however, that the chances of recontraction are about as great with these methods as in the procedure which was employed in his two cases of total resection with denudation of a large area around the ureteral orifice. The results in these cases seem to show, at least, that the procedure may offer relief for two years or more, and the author believes that since the operation is a minor one, done without general anæsthesia, and is simple in technique and devoid of danger, it should be the operation of choice in many cases. He considers the suprapubic method too radical as the initial operation in most cases, particularly in women.

H. A. MOORE.

Elsendrath, D. N.: The Repair of Defects of the Ureter. *J. Am. M. Ass.*, 1913, lxi, 1694.

By Surg., Gynec. & Obst.

The author sums up the various methods that have been previously used for the anastomosis of severed ends of the ureter, particularly lauding the method of Van Hook, by which it is possible to unite a gap of 3.2 inches. The structures which have previously been employed for filling in the portion of the tube that has been destroyed are segments of an artery, vein, segment of the horn of a dog's uterus (fallopian tube), and segments of bowel or vermiform appendix. The use of these structures in most instances has not given satisfactory results, probably owing to the fact that the necrosis of the

interposed tissue is due to the irritation produced by the urine. The author in his experimental work has used a piece of the urinary bladder taken from the fundus of the viscus.

His conclusions are based upon twelve experiments. He removed one inch of the ureter and interposed the piece of bladder, the technique of which he describes in detail.

He divides the results obtained into three groups:

1. In several of the dogs the proximal portion of the ureter became adherent to the abdominal incision, and a urinary fistula was established.

2. In six dogs the transplanted segment of the bladder became necrotic, because union had occurred between the ends of the ureter and the transplant, with subsequent leakage of urine.

3. The third group includes those cases in which the grafts survived, at least temporarily, but when the dogs were examined from four to six weeks after operation it was found that the transplanted bladder segment had contracted and had become converted into a mass of cicatricial tissue.

The results, therefore, are practically the same as those of other investigators who have employed segments of blood-vessels, bowel, appendix, and uterine horn.

I. S. KOLL.

Beck, C.: The Implantation of the Ureters into the Large Bowel. *J. Am. M. Ass.*, 1913, lxi, 1691.

By Surg., Gynec. & Obst.

Beck gives as the chief indications for transplantation of the ureters into the bowel: (1) Injury of the ureter of such a nature that it can neither be sutured again nor implanted into the bladder; (2) fistula of the ureter; (3) total cystectomy; (4) ectopy of the bladder.

This operation has not gained an enthusiastic following because of many drawbacks, chiefly, ascending infection of the kidneys and the difficulty of control of urination. The methods of implantation that have been used are mainly four:

1. Taking along a part of the bladder with the ureter for transplantation.

2. The direct union of the wall of the ureter to the wall of the bowel. This method may be followed by peritonitis, due to pulling out of the sutures.

3. Boari's method, where a small button, on the principle of the Murphy button, is used.

4. Oblique implantation of the ureter into the bowel by a procedure similar to the operation described by Witzel for oblique gastrostomy. This is the method the author has modified and used in the two cases described. The modification consists essentially in implanting the ureter so that it dangles with its free portion in the bowel, the opening of the ureter being made wide by slitting it open one-quarter of an inch. He hopes thereby to prevent infection of the kidney, and further, that the lumen will not be included in the cicatrix of the bowel and will remain patulous.

The first of the two cases reported was a male,

aged 27, with tuberculosis of the bladder, and upon whom suprapubic drainage had been done several months previously to relieve hæmaturia and strangury. The right ureter was implanted into the cæcum, and the left ureter into the sigmoid. The patient improved for some time, but died eighteen months after operation with tubercular involvement of the lungs and of both kidneys. The right ureter was found dangling free in the lumen of the bowel. The left ureter was much distended, its orifice into the bowel being obliterated. The right kidney was partly normal; in other parts it showed acute and chronic inflammation. The left kidney was almost entirely transformed into necrotic tissue. Microscopically, both kidneys showed amyloid degeneration, a bad infiltration of the interstitial tissues with quantities of bacteria and cocci. The bowel below the place of implantation showed a transformation of the epithelium into pavement epithelium, much broken up on the surface.

The second patient was a male, aged 60. The operation, which was done only a few months before he reported, was for an intractable suppurative and fistula of the bladder following suprapubic operation for stone, low down on the ureter. This operation differed from the one formerly described in that the right ureter was implanted into the appendix—an end-to-end anastomosis. Although symptomatically improved, the author believes that in time this patient, too, will develop pyelitis.

Beck concludes that in tuberculosis of the bladder a permanent implantation into the bowel is only palliative, but the method described promises a longer period of freedom from pyelitis than does any other. In more favorable cases, a reimplantation into the bladder may be considered after the viscus has recovered.

A. NELKEN.

BLADDER, URETHRA, AND PENIS

Young, H. H.: The Present Status of the Diagnosis and Treatment of Vesical Tumors. *J. Am. M. Ass.*, 1913, lxi, 1857.

By Surg., Gynec. & Obst.

This study of 117 cases of vesical tumors emphasizes the fact that benign papillomas of the bladder are relatively infrequent, 17 per cent in this series, and that unless the benign cases are cured at operation, they almost always become malignant, finally. The benign cases can be very satisfactorily treated with the high frequency current.

The malignant cases demand radical resection and cauterization, which indicates the importance of an early and correct diagnosis. This is best made by microscopic examination of a piece of the tumor removed by means of Young's cystoscopic rongeur.

A tumor may be benign on the surface but malignant at the base, so that it is important to get a deep piece for examination. Young groups and summarizes the cases according to the operative treatments employed as follows:

1. Suprapubic excisions, forty-seven cases.

2. Fulguration, nineteen cases.

3. Suprapubic drainage, twenty-two cases.

4. Suprapubic partial excision with destruction of the base by cautery or fulguration, five cases.

5. No treatment, twenty-eight cases.

"Excision, as usually carried out, is utterly inadequate and is followed by prompt recurrence in both benign and malignant cases. The cautery is an extremely valuable agent, in conjunction with suprapubic or interperitoneal operations, and when it has been thoroughly applied, even in apparently hopeless cases, some brilliant cures have been obtained.

"Carcinoma of the bladder, except in very extensive cases, is best treated by suprapubic resection of the bladder, leaving a wide area of healthy wall around the tumor; the cautery to be used if possible; ureter transplanted if necessary; and the peritoneum excised when the tumor involves that portion of the bladder. Intraperitoneal operations are rarely necessary, except in tumors of the vertex and posterior wall, as an excellent view of the bladder can be obtained by an extensive median incision; wide separation of the recti muscles; upward displacement of the peritoneum; a long incision into the bladder; and good retraction. The use of 50 per cent resorcin, or alcohol, to kill any tumor particles which may have dropped into the bladder also seems desirable, but a better plan is to thoroughly cauterize the tumor before beginning the resection of the bladder."

FRANK HINMAN.

Ashcraft, L. T.: The Value of the D'Arsonval Current in the Treatment of Benign and Malignant Tumors of the Urinary Bladder Through the Operating Cystoscope. *Surg., Gynec. & Obst.*, 1913, xvii, 636.

By Surg., Gynec. & Obst.

The author's experience with the Oudin and D'Arsonval currents demonstrates the superiority of the D'Arsonval current in the treatment of both benign and malignant tumors of the urinary bladder through the operating cystoscope. To compare their relative values, he conducted a number of experiments with both currents on raw meat, both in air and under water. As a result of the tests he adopted the D'Arsonval current.

The technique is as follows: After cystoscopical preparation, the patient is insulated from the metal table by means of asbestos and a leather cushion. A metal plate, five by eight inches, is strapped to the body by linen tapes, its position corresponding to the location of the tumor. The cord from the plate leads to the solenoid and returns through the solenoid to the cystoscope. The operator sits in front of the patient. The tumor is located with a Nitze cystoscope. A Wappler cystoscope is then introduced and the insulated copper wire is inserted through its tunnel and projected into the center of the growth from 1 mm. to 5 mm. according to its depth. Each seance consists of at least six applications of fifteen seconds each, with a rest of fifteen

seconds, and at least two areas being treated. The fluid is then withdrawn and any shreds saved for microscopical examination, and the bladder washed out with a boric acid solution. The treatment is repeated in from seven to ten days, depending upon the amount of reaction. He advises being on the lookout for daughter tumors which may indicate involvement of the ureters and kidneys.

The author draws the following conclusions:

1. That the D'Arsonval current is superior to the Oudin in the treatment of both benign and malignant tumors.
2. That the Oudin current stimulates malignant growths.
3. That in border-line cases he demonstrates the value of the D'Arsonval current.
4. That the value of the D'Arsonval current in malignant cases remains to be proven.
5. That the D'Arsonval current does more for bladder tumors than surgery.

André: Electro-Coagulation in Tumors of the Bladder (De l'électro-coagulation dans les tumeurs de la vessie). *Tr. Cong. de l'Ass. franc. d'urolog.*, Par., 1913, Oct. By Journal de Chirurgie.

André has used electro-coagulation as a treatment for papillomatous tumors of the bladder in 7 cases. The current was about 200 ma. A Loewenstein's conducting sound was used with a caliber of 8 Charrière, with an ordinary catheterizing cystoscope, the duration of application at each sitting being from 50 seconds to one and one-half minutes, with frequent interruptions of the current. The point of contact of the conductor was also frequently changed so as to cauterize as many points as possible.

In 4 cases the tumor was solitary, in the other three there were two or three. Four cases were recurrences of tumors that had previously been operated on; three cases had never been operated on. The size of the tumors varied from that of a pea to that of a nut. In the small and medium-sized tumors one treatment was sufficient to destroy the tumor; in the larger ones, several treatments were necessary.

This procedure, which is harmless if used carefully, seems to be very effective and capable of giving excellent results. It avoids numerous cutting operations, and, moreover, allows the physician to watch for and destroy recurrences in the very beginning; it is not painful and patients accept it very readily. It may be repeated several times on the same patient, which is another advantage over a cutting operation, and it does not keep the patient in bed — he can go home after each treatment.

J. DUMONT.

Pilcher, P. M.: A Consideration of Twenty-Four Cases of Tumor of the Bladder; and Conclusions as to Appropriate Methods of Treatment. *N. Y. St. J. Med.*, 1913, xiii, 581.

By Surg., Gynec. & Obst.

This paper is based on a series of twenty-four cases which have come under the personal care of

the author, and he divides them into three groups: (1) Inoperable cases; (2) extensive resection of the bladder; and (3) cautery operation.

Two of these cases are unusually interesting and might be briefly quoted. In case eight, the patient had been operated on twice for papillomata of the bladder. After the last operation a large ulcer remained which occupied the trigone and would not heal. The bladder was opened from above and the bipolar high frequency spark applied. The patient's bladder was perfectly normal nine months later.

In case nine the patient had had papillomata of the bladder, removed three years previous. Microscopical examination showed these growths to be adenocarcinomata. Two years later there appeared a recurrent growth on the anterior wall of the bladder in the scar of the suprapubic wound. This was treated with a bipolar spark under general anesthesia and the growth entirely disappeared. "At the present writing, more than three years after the original operation, the patient shows signs of further trouble in the bladder, but no growth has as yet been located."

These two cases surely demonstrate the value of a high frequency when other methods of treatment fail, as in the first mentioned case. The author does not favor extensive resection of the bladder, as in his own experience it has been followed by recurrence in nearly every case, and he has abandoned the intra-abdominal operation for less radical measures. The present method of treatment necessitates destroying the tumor mass by the actual cautery and deep penetration of the base with a bipolar spark.

HERMAN L. KRETSCHMER.

Judd, E. S.: Non-Papillary Benign Tumors of the Bladder. *Tr. Western Surg. Ass.*, St. Louis, 1913, Dec. By Surg., Gynec. & Obst.

Judd notes that out of 164 neoplasms of the bladder operated on in the Mayo Clinic, two were of the non-papillary benign type, springing from the muscular layer of the bladder.

In a review of the literature, he finds 30 similar cases previously reported. In most of the reported cases, bleeding was the first and most marked symptom. Bleeding came apparently from the congested mucous membrane of the entire bladder, but especially that covering the tumor. These muscular tumors extend into the bladder and outward into the peritoneal cavity. The point of origin of the two cases herein reported was close to the meatus of the urethra — both were pedunculated and both were removed suprapubically. The patients made uneventful recoveries and have been well six years and one and three-fourths years, respectively.

Pathologically, the tumors were covered by stratified mucous membrane similar to the mucosa of the bladder; they were composed of smooth muscle-fibers and fibrous connective tissue; and their appearance throughout was that of uterine myomata.

Beer, E.: Transperitoneal Resection of a Diverticulum of the Bladder. *Ann. Surg., Phila.*, 1913, lvii, 634.
By Surg., Gynec. & Obst.

The author reports a case in which he resected a diverticulum by a modified transperitoneal method. Cystoscopy showed two normal ureter orifices from one of which purulent urine was obtained, and from the other clear urine. A diverticulum could be seen and examined by the cystoscope. The residual urine was 20 to 26 ounces; the bladder capacity 42 ounces. The filled bladder extended to the umbilicus. The X-ray with collargol showed a diverticulum about as large as the bladder itself. Operation was decided upon because of the high mortality of unoperated cases. After washing the bladder the diverticulum was approached transperitoneally, and easily dissected free. The large retroperitoneal space left by operation was drained by marsupialization. The patient made an uneventful recovery and twenty-six days after the operation he was discharged cured.
B. S. BARRINGER.

MacGowan, G.: The Transverse Incision and Abdominal Fascia, as a Method of Approach in Suprapubic Operations on the Bladder and the Prostate. *J. Am. M. Ass.*, 1913, li, 1863.
By Surg., Gynec. & Obst.

As a result of personal experience in a large number of cases, the author advocates a transverse incision through the skin, superficial and deep fascia, and through the sheath of the recti muscles. This, he claims, insures good exposure, easy retraction, and the avoidance of trauma to the space of Retzius, infection of which, in the author's opinion, accounts for the greater mortality following suprapubic cystotomy than from the perineal route. The author's method of drainage after suprapubic cystotomy consists in the introduction of a large rubber tube, which is fastened into the bladder by a purse-string suture, through which continuous irrigation is made.
H. L. SANFORD.

Randall, A.: A Study of the Benign Polyps of the Male Urethra. *Surg., Gynec. & Obst.*, 1913, xvii, 548.
By Surg., Gynec. & Obst.

The author gives a critical study of the terminology used to designate the polypoid growths of the urethra, following this with a classification based upon the examination of ten specimens, all of which were studied by microscopical serial sections. The review of the literature shows the diversity of opinion entertained as to the true microscopical structure of the four commonly used terms to designate such growths, and the author attributes this to the attempt to retain a terminology based upon macroscopical examination only.

He concludes by retaining the word polyp as a generic term for the entire group of growths; he advises limiting the term caruncle to the growths as they occur in the female; he excludes the term condyloma, as one has never been described as occurring

in the male urethra; and retains the term papilloma, restricting it to the type of growths which histologically show proliferating papillae.

He classifies the polyps of the male urethra into: (1) Pure type or benign fibrous polyps; (2) villous, or papillomatous, type or benign villous polyps; (3) glandular type or benign glandular polyps. He illustrates these types by reporting four cases of the first group, two of the second, and four of the third.

The greatest interest centers about the group of glandular polyps, which have only rarely been observed and, as pointed out by the author, may have an important bearing on the etiology of the glandular hypertrophy as it occurs in prostatic enlargement.

Cruveilhier, L.: Sensitized Virus Vaccination in Gonorrhœa, and Especially Its Complications. *Lancet, Lond.*, 1913, clxxxv, 1311.
By Surg., Gynec. & Obst.

Cruveilhier claims good results from the use of sensitized (Besredka) gonococcus vaccine in the treatment of epididymitis, prostatitis, metrorrhagia, and gonorrhœal rheumatism. The number of cases is not given. All the cases of epididymitis received no treatment other than the inoculations which were given subcutaneously at 48-hour intervals, and repeated two or three times. The pain disappeared in from twelve to forty-eight hours, and the epididymis returned to normal size and sensitiveness after the third inoculation.

Utero-adrenal complications of gonorrhœa showed marked improvement in discharge, in rigid and painful abdomen, and in general health, following two or three inoculations. Cases of acute and chronic gonorrhœal rheumatism have yielded promptly to the treatment, the striking features being the relief from pain and the speedy return of joint function. While the author thinks the best results are obtained in the treatment of the complications and the chronic states of gonococcus infections, he nevertheless claims very good results in acute and chronic urethritis. All the acute cases were terminated in four weeks. In no instance was there severe reaction following the inoculations.
C. C. WARDEN.

GENITAL ORGANS

Lespinasse, V. D.: Transplantation of the Testicle. *J. Am. M. Ass.*, 1913, li, 1869.
By Surg., Gynec. & Obst.

Lespinasse reviews the experimental work done in transplantation of the testicles, which was usually successful in frogs and chickens; in higher animals, however, failures prevail. In his own experiments he found that there was an immediate destruction of the spermatogenic cells, but that the interstitial cells survived at least two months, after which time most of the experimental animals were killed.

In the human case which he reports, the patient had lost both testicles and also the power of erection. A piece of testicle, removed for this purpose

from a live man, was immediately transplanted to him, and revived the power of erection within a few days after the implantation. The patient's power of erection was perfect a year and a half after the operation. Since that time the patient has not been observed.

Wilson, A. C.: Treatment of Gonorrhœal Epididymitis by Bier's Method. *Brit. M. J.*, 1913, ii, 1281.
By Surg., Gynec. & Obst.

The cord on the affected side is encircled just above the testicle by a strip of lint one and a half inches wide, which is carried around between the two testicles along the median raphe of the scrotum. Over the lint is applied a fine piece of rubber tubing which is secured by an artery forceps, after it has been tightened to the required extent. This means that no pain results after the application; instead, the patients describe a comfortable warm sensation with immediate relief of pain. After a few moments the tissues assume a purplish color like that of a ripe plum. The treatment is applied the first day for an hour, if it can be borne for that length of time; the time is gradually increased up to eight hours a day. The longer the applications, the shorter the duration of the disease.

Four cases in sailors treated by the usual old-time methods required in all 62 days of treatment, an average of 15.5 days each; six treated by the hyperæmia method required only 44 days all together, an average of but seven and one-third days apiece, or less than half the former time.

FAXTON E. GARDNER.

Schloffer, H.: Technique of Suprapubic Prostatectomy, and Its After-Treatment (Zur Technik der suprapubischen Prostatektomie und ihrer Nachbehandlung). *Prag. med. Wchnschr.*, 1913, xxviii, 532.
By Journal de Chirurgie.

The mortality of transvesical suprapubic prostatectomy has, in recent years, been reduced to less than 10 per cent. The cause of this decided improvement lies not so much in the improvement of operative technique as in the after-treatment. The enucleation should be performed, not as quickly as possible, but as carefully, so as to lessen the danger of hæmorrhage. The author has never seen any harmful results from dressing the bladder wound before the bleeding entirely ceases; he uses a very wide suprapubic bladder drain, and in this way avoids the collection of coagula, which stop up the drainage, and the complications arising from hæmorrhage, which he thinks are due much more to this cause than to the actual loss of blood.

The bladder should not be fastened superficially, but deep down so as to avoid the formation of a fistula. The drainage tube should be in the upper angle of the bladder wound, as far as possible from the symphysis, and should be sutured so that it is water-tight, and in such a way that the bladder wall is invaginated as much as a thumbbreadth or more. In order to make this possible, the peritoneum must

be carefully dissected off from the bladder wall over a space as large as a saucer, so that there may be no danger of including any peritoneum. By using the broad drainage tube there is no possibility of a collection of fluid in the bladder so long as the tube remains in position. Schloffer irrigates as little as possible; in the first few days after the operation irrigation is practiced only if the drainage tube becomes stopped up. The second indication for irrigation is the decomposition of urine in the bladder and especially in the bed of the prostate. But he thinks the irrigation itself may carry infected particles into the tissues. To be sure there is a collection of necrotic tissue in the bed of the prostate that must be removed, but this can be done after a considerable time; irrigation in the first few days after the operation is not necessary.

As the formation of a stricture at the site of a prostatectomy is not generally to be feared, he removes in the course of the enucleation not only the prostatic urethra but a large part of the mucous membrane covering the prostate. He recommends that the left index-finger, protected by a glove, be introduced into the rectum, as this makes the enucleation much easier. He opposes the use of a tampon in the bed of the prostate during the first few days. The bladder drain remains till the seventh or eighth day; on the sixth or seventh day a permanent catheter is inserted, and the necrotic fragments are then washed out through the bladder drain; after which the drain is removed and regular irrigations performed through the permanent catheter, which remains until the fourteenth day. The ultimate results of this after-treatment have been uniformly favorable.
COLLEY.

Marion, G.: After-Treatment of Suprapubic Prostatectomy (Soins consécutifs à la prostatectomie sus-pubienne). *J. d'uro.*, 1913, iv, 533.
By Journal de Chirurgie.

Post-operative treatment is of the greatest importance in prostatectomy, and Marion studies it in detail. It includes: (1) Local treatment to secure the earliest possible healing of the suprapubic and vesicoprostatic wounds, and to put the bladder in perfect condition; (2) general treatment; (3) treatment of complications.

Local treatment. The first indication is to stop hæmorrhage from the prostatic cavity. Marion tampons it with gauze sponges with tapes passing out of the bladder through the lumen of a Freyer's tube. This tampon is left in place for three days. The more or less frequent desire to urinate, which is caused by the presence of the tampon, is relieved by suppositories of belladonna and morphine.

The sponges are removed the fourth day and the large Freyer's tube replaced by the largest-sized Marion's tube. Every three or four days the drain is removed and replaced by a smaller one; the dressing is ordinarily changed only when the tube is changed.

About the twelfth day the hypogastric wound

has sufficiently recovered to establish permanent drainage. To be sure of the solidity of the closure of the bladder the sound should be kept in for 48 hours after the cessation of any discharge from the hypogastric wound. In some cases the vertical wound is closed in 12 days; on an average, however, it requires 17 to 21 days and sometimes 25 to 30 days.

General treatment. This includes the treatment of shock immediately after the operation, and care of the digestive and genito-urinary apparatus. The diet should be closely watched, to avoid azotæmia and chloruræmia, which may be caused by deficient nutrition.

Pulmonary complications are rare, but it is well to have the patient sit up as soon as possible. To have him get up and walk early, however, is apt to do more harm than good, as early walking frequently causes phlebitis of the lower limbs.

Complications. Secondary hæmorrhage may appear from the tenth to the twelfth day from the separation of a prostatic scar; it is very rare and is generally controlled by tamponing the prostatic cavity.

Infection of the abdominal wound may occur in patients who have had a cystitis. If suppuration reaches Retzius' space drainage is necessary.

If the orifice in the bladder is not closed by the thirty-fifth day surgical closure of the fistula is necessary. The most important point in this operation is the complete dissection of the bladder from the abdominal wall; the vesical wound should be closed by suture in two layers.

Incontinence after recovery is met with sometimes. It is ordinarily orthostatic and generally yields on dilatation of the urethra.

Stricture of the urethra at its opening into the prostatic cavity is rare; it may be remedied by progressive dilatation or internal urethrotomy.

Orchitis is exceptional if the vasa deferentia are ligated, but is quite frequent if they are not, especially after a permanent drainage tube is inserted; but even if it occurs the drainage should be maintained.

Azotæmia or chloruræmia may appear after prostatectomy; they are the symptoms of acute nephritis, often caused by the chloroform, and should be treated dietetically.

Pylonephritis is a serious condition and may be caused by manipulations of the bladder or urethra causing traumatism of the mucous membrane. Extreme care should be exercised in post-operative manipulations to avoid injuring or infecting the urinary passages.

Urinary infection generally yields readily if the bladder is well drained. A permanent drainage tube should be used in addition to the suprapubic drainage and continuous irrigation of the bladder gives excellent results.

There are various forms of phlebitis:

1. A common form is characterized by pain in the leg, elevation of temperature, and œdema; it may reach the abdomen or involve the other leg. It is of long duration but generally recovers.

2. The infectious form in which the œdema is less marked, is generally limited to the leg, but the elevation of temperature is greater and the general condition bad. This form is complicated by small infected emboli, which produce a chill, a rise in temperature, and a worse general condition. A repetition of such emboli may cause death.

3. A deep form, phlebitis of the periprostatic plexus, is insidious and generally not recognized, because not accompanied by any œdema of the leg. The only symptoms, which, would lead to suspicion of its presence, are a rise in temperature and a change in the general condition not explained in any other way. It is the most frequent cause of rapidly fatal emboli.

J. TANTON.

MISCELLANEOUS

Hinman, F.: An Experimental Study of the Antiseptic Value, in the Urine, of the Internal Use of Hexamethylenamine. *J. Am. M. Ass.*, 1913, li, 1601. By Surg., Gynec. & Obst.

This paper gives the results of 318 quantitative estimations of formalin in the urine of 116 patients, getting hexamethylenamine by mouth (grains, xv. t. i. d. p. c.) and considers the important factors influencing the excretion of hexamethylenamine in the urine and the subsequent conversion of this into formalin. In the author's opinion hexamethylenamine has no antiseptic value, and formalin can only be of value in a dilution of about 1 to 30,000 or stronger. He used a modification of Rimini's phenylhydrazin-nitroprusside test for making the quantitative estimations of formalin.

"Only four of the 116 cases failed to show formalin. In each of these four cases only one specimen was examined. The remaining 112 cases were positive for formalin at some one examination. Only eight cases revealed formalin in germicidal strength, and five of these patients had been fed on acid sodium phosphate, so that in only about 2 per cent of the usual cases did the urine give the 1 to 7,000 test at any one time; 25 per cent had formalin in amounts to give complete bacterial inhibition; 55 per cent of the cases gave at some one examination a 1 to 30,000 test or better; 44 per cent of the cases, although formalin was present, at no time had this formalin in sufficient amount to furnish antiseptic benefit. Of the 318 examinations, 36 per cent were definitely antiseptic, and of these only 17 per cent showed formalin in strength to give complete bacteriostasis, and only 5 per cent were germicidal; 64 per cent had less than 1 to 30,000, and possessed no antiseptic value."

The findings in 33 cases in which the kidneys were definitely diseased do not indicate that disease of the kidneys exerts any influence whatsoever on the formalin content in the urine.

At the level of the kidney, hexamethylenamine is of little or no antiseptic value, as indicated by the findings on 23 catheterized (ureteral) specimens, only five of which showed formalin, and only in a strength of about 1 to 60,000. The author explains

this slight conversion at the kidney by the lack of time necessary for formalin conversion in an acid medium.

The factors that influence the formalin content in the urine are considered of two kinds: those that influence hexamethylenamine excretion, and those that influence hexamethylenamine conversion.

The size of the dose, the interval of administration, and the character of the changes in the acid contents of the stomach are the important factors in excretion. Lavage of the stomach, one-half hour after feeding 10 grains of hexamethylenamine, showed formalin in the stomach contents in the proportion of about 1 to 20,000.

In patients who had been given formalin by mouth, but who had not been getting hexamethylenamine, neither hexamethylenamine nor formalin were later found in the urine. The amount of hexamethylenamine broken up in the acid of the stomach, therefore, is that much loss for subsequent conversion in an acid urine. The feeding of salol-coated pills of hexamethylenamine so as to carry the hexamethylenamine beyond the stomach did not make an appreciable difference in the formalin content in the urine, but the method is available for high gastric acidity or irritability.

With respect to the subsequent conversion of the hexamethylenamine in the urine, the degree of urinary acidity is the most important factor. Using phenolphthalein as an indicator, 10 ccm. of urine were titrated against $N_{10}NaOH$, to determine urinary acidity. This varied from 0.1 to 7.9 ccm. the average of the 231 examinations made being 3.1 ccm.; 29 of the urines had an acidity of less than 1 ccm., and of these 13 were negative for formalin and 12 others barely gave a test; whereas, of the urines with an acidity of 2 ccm. all showed formalin, and, with the exception of six cases, all showed formalin in a dilution of 1 to 40,000 or better.

The importance of urinary acidity is further shown in the following observations:

1. The urine of a patient on hexamethylenamine, if acid, will, after standing, give a higher test for formalin than when fresh.

2. If hexamethylenamine is added to an acid urine it will be quickly converted into formalin. On the

other hand, hexamethylenamine added to a neutral or alkaline urine shows none of this conversion.

3. The addition of sodium acid phosphate, or of any acid, to the urine of a patient on hexamethylenamine negative for formalin will convert the hexamethylenamine present.

4. Increasing or decreasing the acidity of the urine of a patient, through his diet, causes a corresponding change in the formalin content of the urine.

The conclusions are that:

1. The conversion of hexamethylenamine into formalin is a simple chemical process which will readily occur in an acid medium, but will not occur in an alkaline medium.

2. The amount of excretion of hexamethylenamine in the urine is influenced by the size of the dose, by the frequency of administration, and by the character of the changes that occur in the acid contents of the stomach.

3. The amount of the subsequent conversion of this hexamethylenamine in the urine is dependent on the degree of urinary acidity, on the duration of exposure to the influence to this acidity, and on the percentage concentration of the drug in it; and, in order to give formalin conversion in antiseptic amounts, the urinary acidity should be greater than 2 ccm. of tenth-normal sodium hydroxide for 10 ccm. of urine.

4. A low acidity may be temporarily increased by feeding certain acid-producing drugs, and this acidity may often be maintained by giving these drugs alternately.

5. Disease of the kidney has no influence on the formalin content of the urine.

6. At the level of the kidneys, hexamethylenamine, in doses of 15 grains, three times a day, has no antiseptic value.

7. Formalin is present in the bladder urine in some amount in practically every case receiving 15 grains of hexamethylenamine by mouth, three times a day, but, because of the great significance of urinary acidity, this dosage is too small a routine from which to always expect a reasonable antiseptic benefit.

8. The allied hexamethylenamine compounds do not give greater antiseptic values than pure hexamethylenamine.

SURGERY OF THE EYE AND EAR

EYE

Sussmann, R.: Inclusion Blepharitis in the New-Born (Ein Beitrag zur Kenntnis der Einschlussblepharitis der Neugeborenen). *Deutsche med. Wochenschr.*, 1913, xxxix, 1545.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

About one-third of all the cases of blepharitis in the new-born have hitherto shown no bacteriological findings. Different hypotheses were proposed to explain these questionable cases, among which the so-called late infection of Heymann was the most generally accepted until it was found that the von Provazek-Halberstadt epithelial inclosures, the trachoma bodies, were found more frequently in cases of blepharitis in the new-born than in real trachoma. Experimental investigation finally led to the complete identification of these inclusion blepharitis with true trachoma. Further investigation showed, however, that inclusion blepharitis was an independent, hitherto unknown disease.

The author, from his 72 cases of blepharitis and blepharitis catarrh resembling trachoma, comes to the following conclusions: Inclusion blepharitis forms almost half of all blepharitis. In this way the gap left by the negative bacteriological examination in so many cases of blepharitis is filled. Most late infections are those of inclusion blepharitis. These show a marked lack of bacteria; mixed infections with gonococci are rare. Inclusion blepharitis is distinguished from gonococcal blepharitis by its longer incubation period, 5 to 9 days, by its more seropurulent secretion, stronger tendency to hemorrhages from mucous membrane, by its protracted course, and by the fact that it spares the cornea. Simple catarrh of the new-born is not inclusion blepharitis.

BORELL.

Miller, R. W.: Affections of the Eyes Resulting from Sinus Involvements. *Calif. St. J. Med.*, 1913, xi, 450.

By Surg., Gynec. & Obst.

The careful examination and treatment of the sinuses in ocular and neuralgic complaints makes it possible to explain the etiology and pathology of many ocular and orbital diseases.

Only after special care and repeated examinations is it possible to discover the source of the trouble in non-suppurative and closed suppurative cases of sinus involvement. No part of the eye is exempt from secondary invasion from sinus diseases. The causes of organic ocular and orbital disease are: (1) Mechanical or irritative; (2) toxic; (3) septic. These may result in hyperemia, hyperplasia, or some type of inflammation.

The frequent occurrence of sinus inflammation

with ocular or orbital complication noted in the last few years in Los Angeles prompted the article. Ocular or orbital pain, at some stage of the process, must be regarded as one of the chief symptoms. The orbital pain is aggravated by muscular action of the eyes. The anatomical condition of the turbinates and nasal septum explains why sinus diseases are so generally bilateral. Miller intentionally omits the numerous diagnostic tests for sinusitis. It is his experience that ocular complications have been observed with far greater frequency in chronic than in acute sinus involvements. Numerous cases showed evidence of chronicity with acute exacerbation. Long continued closure from egress and ingress of air with its oxygen content seems to aggravate the condition of the involved sinus, which maintains a constant swelling and bagginess, and eventually develops into hyperplasia, with or without suppuration. This favors ocular complications, varying in degree from the milder to the pronounced type of intra-ocular suppuration.

He cites the case of a woman aged 35, who complained of feeling sand in her eyes, and of being unable to use her eyes for close work. She had frontal headaches, slight conjunctival congestion, and slight tenderness on pressure in the upper and inner orbital angles. The ophthalmoscope revealed a mild chorioretinitis in each eye. The refraction error was slight and she found no relief from wearing glasses. The anterior part of the right middle turbinate body was removed, and a few days later the entire left turbinate was removed. Pus 2 ccm. in quantity was seen to flow from the ethmoid cells. The treatment was followed by marked relief.

EAR

Lynch, R. C.: Congenital Absence of Both Ears. *Laryngoscope*, 1913, xxiii, 1050.

By Surg., Gynec. & Obst.

The case reported by Lynch is that of a boy 12 years of age, having six brothers and sisters, all of whom appear to be normal in their development, while the unfortunate subject of the paper had not even a sign or vestige of an auricle or ear on either side of his head, the skin being absolutely clean and smooth, covering the ordinary site of the auricle and external auditory meatus.

In the nasopharynx a corresponding lack of development existed, there was no prominence of the eustachian tube, and indeed no tube at all—no fossa of Rosenmüller. Although the doctor could elicit no evidence whatever of hearing by use of tuning forks or any form of extraneous noise, the mother of the patient maintained that the boy

would imitate chickens and cows, would dance with joy when the piano was played, and would run to the river bank when the steamboats whistled. Lynch reports this case as being the only instance of such a condition of which he has been able to find a record.

H. BEATTIE BROWN.

Whiting, F.: The Indications for the Labyrinth Operation. *N. Y. St. J. Med.*, 1913, xiii, 596.

By Surg., Gynec. & Obst.

The author states that though much has been accomplished in recent years by the critical study of the physiology of the labyrinth, still the symptomatology of labyrinthitis, with its bearing upon the indications for operation, is still an uncompleted study.

He emphasizes the fact that while even a small amount of pus contained in the labyrinth is a constant menace to contiguous intracranial structures, still some cases of purulent labyrinthitis heal spontaneously, and consequently, accurate diagnosis is necessary to anticipate a favorable outcome for operative procedures.

He considers no operative interference indicated in either a circumscribed or a diffuse serous labyrinthitis, unless it becomes converted into a purulent labyrinthitis, and, though not in accord with the teachings of the Vienna school, the author believes that early operation in acute diffuse purulent labyrinthitis offers the patient a greater degree of security than delayed procedure, especially when the acute labyrinthitis supervenes upon a chronic purulent otitis media. In cases of chronic diffuse purulent labyrinthitis he thinks there is no choice as to operation, as the indications are for the labyrinth operation or none at all.

ELLEN J. PATTERSON.

McKinney, D. R.: Cavernous Sinus Thrombosis; Report of a Case. *Laryngoscope*, 1913, xxiii, 1059.

The patient, a woman 31 years of age, was treated for antrum trouble, which was relieved by irrigation. Later, following a severe cold in the head, her face swelled and she developed pain all over the right side of the face and above the right eye, and foul smelling pus was occasionally discharged from the corresponding naris. Her temperature was 100.5° to 103° and morphia was required for the pain. The right antrum was discharging pus, and the swelling increased so that the upper lid of the right eye was closed, and showed bluish congestion, indicating blood stasis.

The treatment consisted of an ice pack continuously, and a 2 per cent cocaine spray, with frequent irrigation of the right naris with a warm saturated solution of boric acid. The temperature fluctuated between 103° and 104°; when it rose the patient became more or less delirious.

Four days after the first examination, her temperature became normal, and she said she felt better than at any time since the beginning of the attack. Soon, however, the temperature began to rise,

delirium developed, and the patient died in the afternoon of the same day. H. BEATTIE BROWN.

Beck, J. C.: Failures and Successes in Diagnosis and Surgical Intervention of Some Intracranial Diseases, Especially from the Standpoint of an Otolaryngologist; with Report of Cases. *Illinois M. J.*, 1913, xxiv, 265.

By Surg., Gynec. & Obst.

Because of his firm conviction that lessons learned from failures contribute as much to the ultimate success of a surgeon as a recital of successes, the author has set forth and attempted to analyze both his failures and successes.

The conditions discussed are: Sinus thrombosis, meningitis, extradural abscess, brain abscess, brain tumor, hypophysis tumor, intracranial hæmorrhage with and without fracture of the skull, gasserian ganglion affections—intractable tic douloureux—external hydrocephalus, and encephalocele.

Of 38 cases of sinus thrombosis, either with or without complications, as bulb and jugular involvement, meningitis, brain abscess, and general sepsis, or some other general condition, as pneumonia, nephritis, etc., 26 recovered following operation. Of the 12 fatal cases, 10 were complicated mostly by septic pneumonia, which came practically moribund to the operating table; the 2 remaining cases, which were diagnosed early and apparently not complicated, died from rapidly developing meningitis. Both of these cases were of the streptococcic type of infection.

Of the 51 cases of meningitis of which the author had adequate records, 18 had spinal punctures and septic organisms were recovered from 12. The diagnosis of diffuse septic meningitis was made in 37 cases of the 51. Of these 37 cases, 28 came to operation, either primarily as a nasal accessory sinus, mastoid, or some other local infection, as by way of the exposure of the meninges over the seat nearest the infection, and finally the opening of the cisterna magna. Of the 14 remaining cases of meningitis, either of the local, septic, or serous type, 12 recovered without operation and 2 died. This number does not include the local meningitis with brain abscess, sinus thrombosis, etc. Of the 37 cases of diffuse septic meningitis, whether operated on or not, only 3 recovered.

Of 16 extradural abscesses, 11 were found at the time of operating for mastoid, sinus thrombosis, and frontal sinus disease; 12 of these 16 cases recovered after operation. Of the 4 fatal cases, 3 were operated on and complications arose on account of intradural abscess, meningitis, and general sepsis; 1 case which was diagnosed, refused operation, but a post-mortem examination revealed a large extradural abscess in the cerebellar region.

Of 19 cases of intradural abscess 2 recovered. Both of these were in the temporosphenoidal area, and the operation was by way of the mastoid tegmen route. In neither case could there be any micro-organism recovered from the pus of the abscess,

either in smear or culture. In one case, the abscess followed a rapidly destructive mastoiditis in an influenza infection, and the second occurred in the seventh week of a scarlet fever otitis media in a child aged 3 years. Of the 17 remaining cases, 10 came to operation; 6 were in the cerebellar region, 2 frontoparietal, and 2 temporosphenoidal. The 7 cases either refused operation or were too far advanced to be submitted to the operation.

Of 8 cases of brain tumor, there was made a correct localization diagnosis in 5, this number not including gummata. The pathological types were cyst, osteoma or exostosis, fibrosarcoma, and glioma. The locations were 2 in the motor area, 1 occipital (supratentorially), 1 in the positive cerebellar angle, 1 frontoparietal, and 1 at the base of the frontal lobe. Five were operated on with a mortality of 75 per cent. In not a single instance did the röntgenogram reveal the tumor. Spinal punctures were made in 7 of the 8 cases, and only in 1 was there any increase in pressure, and in all there was a negative Noguchi globulin or Nonné test present.

Besides several cases of acromegaly, there were 3 cases of hypophysis tumor diagnosed only at operation or post-mortem; 1 was erroneously diagnosed as cerebral tumor; the other 2 were diagnosed as nasopharyngeal fibrosarcoma.

There are three types of intracranial hæmorrhage: (1) basal fracture; (2) fractures not including the base; (3) combined.

A case of intractable tic douloureux is cited in which the ganglion was completely removed, without giving the patient the expected relief.

The author reports one case each of external hydrocephalus and encephalocele with fatalities in both.

O. M. ROTT.

Day, E. W.: Report of 8 Cases of Purulent Meningitis Operated Upon by the Haines' Method; Post-Mortem Findings. *Laryngoscope*, 1913, xxiii, 1041.

By Surg., Gynec. & Obst.

Day gives due credit to Haines for originating a brilliant operation for the treatment of purulent

meningitis, and though it seemed to offer great possibilities as a curative measure, a sufficient number of cases has not as yet been reported to establish a conclusion as to its real value. The author reports twelve cases of suppurative meningitis treated by him, in nine of which he performed the Haines' operation, by drainage of the cisterna magna.

The author notes that in only one of his cases was there any evidence of œdema of the fundal veins, neither was there any constantly increasing blood pressure. One case recovered. The establishment of free drainage for the cerebral fluid was not difficult. In seven cases the amount of fluid drained in 24 hours averaged eight ounces.

In all but one case, the diagnosis of meningitis was confirmed by lumbar puncture. The symptoms were not diminished by drainage of the cisterna magna in the two cases that were secondary to fracture of the base of the skull, while in the other cases there was a definite period of improvement, evidenced by lessening or absence of headache, clearer mentality, loss of muscular rigidity, lower temperature and pulse. This stage was followed by the usual progressive sepsis, finally ending in a deep septic coma, and death apparently free from pain. The period of improvement varied from a few hours to nine days.

Day divides the course of this disease, when treated by drainage of the cisterna magna, into three well-defined periods: (1) The period of invasion; (2) the period of improvement; and (3) the period of sepsis.

He gives an interesting history of his cases with the pathology and autopsy findings, and concludes his instructive paper by saying: "Drainage of the cisterna magna hinders the development of a diffuse meningitis over the hemispheres, prevents the accumulation of inflammatory exudate in the subdural spaces, but appears to have no effect upon the accumulation of pus in the pia-arachnoid, and does not influence the progress of the infection at the base of the brain."

H. BEATTIE BROWN.

SURGERY OF THE NOSE, THROAT, AND MOUTH

NOSE

Sluder, G.: Nerve Trunk Anæsthesia and Carbolicization, in Nasal Surgery. *Laryngoscope*, 1913, xxiii, 1078. By Surg., Gynec. & Obst.

The author states that three years ago he began the cocaineization of the sphenopalatine ganglion as a procedure for postnasal surgical anæsthesia. A short time later he adopted a similar practice with the internal nasal nerve.

He has found this procedure exceedingly satisfactory. A very small applicator containing one-half minim saturated solution of cocaine mur. is placed under the posterior tip of the middle turbinate and allowed to remain for fifteen minutes. Eight minutes after setting the applicator for the ganglion, the applicator is set for the internal nasal nerve. A smaller applicator is used, carrying one-half drop applied to the uppermost anterior aspect of the nasal fossa.

Both applicators are removed simultaneously, one having been in fifteen minutes and the other seven. The anæsthesia thus produced gives more than half an hour for the performance of the most comprehensive bone surgery of the lateral wall.

The author refers to another method used by him, which he calls "nerve-trunk blocking," in which he uses 5 per cent phenol in 95 per cent alcohol, injected by means of a straight needle used both for the internal nasal nerve and the sphenopalatine ganglion. To introduce the needle into the sphenopalatine ganglion, it is passed under the posterior tip of the middle turbinate in a direction upward, backward, and slightly outward, and is introduced two-thirds centimeters by measurement from its point of contact — one-half cubic centimeter of the solution is then injected. Carbolic acid added to the alcohol prevents much, if not all, of the pain of alcohol when injected, and the analgesia seems to the author to be much greater and of longer duration.

W. H. JAMISON.

Noyes, M. L.: Report of a Few Cases Where Sutures, Instead of Packing, Have Been Used, After Submucous Resection of the Nasal Septum. *Boston M. & S. J.*, 1913, clxix, 542.

By Surg., Gynec. & Obst.

The method of finishing this operation is as described by Lothrop and consists of a quilting-stitch being used through both flaps as far back as the bone and cartilage have been removed, five or more stitches being employed.

The author reports 10 cases, in 9 of which the results of this procedure were very satisfactory; in the tenth, an abscess of three days' duration resulted,

due, as she considers, to faulty placing of the stitches.

The advantages of this method are: Free breathing, less discomfort, less trauma to turbinates, and more rapid healing.

EARLE B. FOWLER.

THROAT

Casselberry, W. E.: The Recognition of Early Changes in the Larynx in Tuberculosis. *J. Am. M. Ass.*, 1913, lxi, 1789.

By Surg., Gynec. & Obst.

The author urges the importance of early diagnosis of laryngeal tuberculosis, especially in a tuberculous subject, since prognosis and treatment depend largely upon laryngeal involvement.

Although not differing from tuberculosis elsewhere, laryngeal tuberculosis favors certain sites, each of which tends to stamp the lesion with its own local function; and though the stamp be that of location rather than of lesion, its impress on the tuberculous matrix is apt to leave a mark distinctive of the lesion itself. This is especially true of a site designated by the author as the vocal angle and described as starting at the base of the vocal process and mounting, with a posterolateral trend, it marks the line where the superficial structures of the true cord, the false cord, and the interarytenoid fold merge into one.

In ordinary phonation and in a normal larynx, no imprint is noticed at this site, but tuberculous infiltration will cause it to retain in the form of a furrow or fissure, the impress made on it at the folding line.

This hyperplasia, commencing at the subglottic portion of the base of the vocal process, and marked gradually by a furrow in the vocal angle, the author considers one of the earliest and most distinctive of all the initial changes wrought by tuberculosis in the larynx, and indicates tuberculosis before interarytenoid hyperplasia would have passed the stage of similarity to non-tuberculous infiltration.

ELLEN J. PATTERSON.

MOUTH

McCurdy, S. L.: Plastic Mouth Surgery. *Pittsburgh M. J.*, 1913, i, 19. By Surg., Gynec. & Obst.

In this paper the author advocates the complete closure of wounds within the mouth, depending upon the use of tincture of iodine for sterilization, even after the removal of sequestræ or even the antral floor, and avoiding the gauze pack, which forces the tissue farther away from the bone and retards repair.

In the lower jaw, when drainage is necessary, an incision is made from without, or when an abscess is "pointing" it should be treated in like manner. Two cases are reported: One in which the antrum was opened while operating on a cyst, and one in which it was necessary to remove the external half of the mandible from the right second molar to the second bicuspid on the left side, leaving the remaining bone denuded over a large area. In both cases, after the application of tincture of iodine, the wounds, after the edges were freed, were closed; in the second case, an incision was made through the skin beneath the jaw and a rubber drain inserted, both cases making uninterrupted recoveries.

He describes another operation for closure of a naso-oral fistula, assuming that the labial gingival structures are destroyed and that the lingual periosteum and mucous membrane extend well down to the normal line.

He makes a flap or tongue large enough to cover the opening, by incising the mucous membrane and periosteum, freshening the end of it as well as the borders of the opening, and suturing it in place with the chromicized gut.

H. A. PORTS.

Loeb, V.: Fields for Research in Oral Surgery.
J. Am. M. Ass., 1913, lxi, 1889.

By Surg., Gynec. & Obst.

In this short paper the author confines his remarks to some of the fields for research in oral surgery which are not definitely marked out and, to facilitate the discussion, divides the subject into five classes: embryological, anatomical, bacteriological, physiological, and chemical.

Those comprising the first class, are: Cleft-palate which has been produced in animals, harelip fistula of the lip, fissure of the tongue and cheek, facial asymmetry, and congenital teeth.

Cases are cited showing the hereditary influence in cleft palate and harelip. Ballentyne thinks the solution of the problem lies in a thorough embryological investigation, teratological developments being utilized as hints to direct research.

In the anatomical field the lingual papillæ, the musculature of the lips and cheeks in articulation, as well as the lymphatic distribution and the exact location of the pharyngeal end of Rathke's pouch merit more definite research.

In bacteriology there are many undeveloped problems such as relative virulence of micro-organisms at different ages, the specific cause of pyorrhœa alveolaris, foci of infection and the absorption of toxins from them.

The saliva also presents a number of important physiological problems for investigative work, among which is the presence of albumin in tuberculosis of the lungs. The formation of calculous deposits is also little understood and the efficacy of various tooth powders and pastes and mouth washes is not settled. The etiology, diagnosis, and treatment of several diseases of the oral cavity are still uncertain, viz.: tri-facial neuralgia, stomatitis aphthosa, leukoplekia, pyorrhœa alveolaris, and others. In this paper the author aims to stimulate and encourage research work along the lines mentioned in order that progress may be promoted and routine measures obliterated.

H. A. PORTS.

Dean, L. W.: A Method of Closing a Sinus Between the Antrum of Highmore and the Mouth. *J. Am. M. Ass.*, 1913, lxi, 1613.

By Surg., Gynec. & Obst.

The author advocates this method of closing sinuses, remaining after removal of large quantities of bone following necrosis, or in chronic cases, which require permanent drainage into the nasal fossa. After numerous failures due to improper suture material and imperfect mattress suture, he details his technique as follows, claiming 95 per cent union. After having completed proper drainage into the nose, by the Denker or other suitable operation, and the removal of necrotic bone; after dissecting the gum and periosteum up from the inner and outer alveolar plates, which he removes sufficiently to allow the periosteal flaps to fall together without tension, he applies along the inner and outer surfaces of the alveolar process a piece of small rubber tubing long enough to be tucked under all the sutures. Now passing a double-armed silkworm-gut suture from within outward, the loop passes around the tube on the inner side, and the knot lies upon the tube on the outer side, care being taken that the pressure be not sufficient to produce necrosis, the wound and sutures being cleansed hourly with hydrogen peroxide. Within seven to ten days healing may be completed. H. A. PORTS.

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INTERNATIONAL ABSTRACT OF SURGERY

APRIL, 1914

MONTHLY COLLECTIVE REVIEW

FREE TISSUE TRANSPLANTATIONS

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THE transplantation of detached portions of the living body has long been of interest, as witnessed by the fact that it has so frequently been the theme of the artist during the past three or four hundred years. Occasional attempts at its performance were made, but with uniformly bad results until after the middle of the 19th century. In 1858, Ollier established its feasibility by the successful transplantation of bone and, in 1870, Reverdin performed the first successful skin transplantations. New possibilities were soon opened up by the introduction of antiseptics, and with the works of Thiersch, Krause, Wolff, and Hirschberg the transplantation of skin was carried almost to completion. However, little headway was made with the transplantation of other tissues until the beginning of the present century. With a more refined technique came renewed interest, and one is safe in saying that, during the past ten years, the free transplantation of tissues has been more extensively investigated and more rapidly advanced than any other phase of operative surgery. The composition of the transplant has been extremely varied; all of the different tissue elements have been transplanted either separately or in combination, chiefly with the idea of restoring missing portions or correcting mechanical defects. Portions of or entire organs have been transplanted in order to obtain their physiological effects in a host where the homologous organs are defective, either as a result of disease or of operative removal, as, for instance, the transplantation of parathyroid for post-operative tetany, following accidental parathyroidectomy in goiter

operations. The result of a transplantation is dependent upon a great many factors which may be considered under the following heads:

1. *The nature of the cells comprising the transplant.* The more highly specialized a cell is the less marked are its resisting and regenerating powers, and this is particularly well shown in the case of transplantations. The simpler tissues which require less nutrition survive for days on the transudate which permeates them, but the more highly specialized ones undergo necrosis in a few hours without a blood vascular circulation. The most favorable tissues for transplantation are the simpler connective tissues, such as tendons, fat, fascia, and bone; the most unfavorable ones are muscle and nerve.

2. *The source of the material.* Autoplastic transplants are those which are derived from the same animal into which they are transplanted, and, other things being equal, give the best results. The tissues and fluids of each body are different from those of every other body, and while this difference may be only slight, it is sufficient to make it advisable whenever possible to use the patient's own tissues for the repair of his defects.

Homoplastic transplants are those which are derived from another animal of the same species. When composed of the simpler tissues, such as fascia and tendon, they may be used successfully but not with the same regularity as autoplastic grafts, and when composed of the more highly differentiated cells, such as skin or mucous membrane, they result in failure. Other objections to their use are that material is often difficult to

obtain and that disease may be transmitted from the donor to the host.

Heteroplastic transplants are those which are derived from an animal of a different species or consist of dead animal tissue. Living tissue from a different species always succumbs when transplanted into man or the higher animals. If there is infection, which is particularly liable to occur, it immediately sloughs out. If there is no infection, it either becomes incapsulated or is absorbed, and is slowly substituted by the tissue into which it is transplanted, as may happen in the case of bone, months after its transplantation. Hence, clinically, the transplantation may be a success while the transplant undergoes partial or even complete necrosis.

3. *The indication for the transplantation.* If tissue is transplanted into a location in which it is not needed, it is even harmful; and where there is no function for it to perform, its cells may retain their vitality, but nearly always there will be few or no proliferative changes in the transplant. On the other hand, a sort of atrophy of disuse usually sets in and it slowly decreases in size and is eventually absorbed. However, if it is transplanted into a defect in the course of tissue where there is demand for it to perform a function, proliferative changes are usually marked and it rapidly becomes united to and similar in structure to the portion into which it is transplanted. This is according to the law of functional irritation laid down by Roux. If the transplantation has been technically so well performed that active demands can be made upon it to functionate without injury, the response will be very much greater, as in the case of transplanted tendons which have been so well sutured that early active movements can be carried out; this is well illustrated by the experimental work of Lewis and Davis. This rule holds for glandular tissues which have a secretory function to perform as well as for connective tissues whose function is local and mechanical. Halsted has shown that parathyroids would not take and remain alive for any length of time unless there was a deficiency of parathyroid material and secretion in the animal.

4. *The technique of the transplantation.* This is of very great importance. Asepsis is essential for uniformly good results, although a mild infection is not necessarily indicative of failure. Grafts composed of the connective tissues frequently take in part or whole in the presence of slight infection.

Good hæmostasis is very essential for the rapid reestablishment of circulation. A hæma-

toma not only favors the development of infection but also interferes with the early nutrition of the transplant by the permeating serum. The avoidance of traumatism to the transplant prevents necrosis of portions and lessens the danger of infection and the possibility of the formation of adhesions, which may be highly desirable, as in the case of transplanted tendons. Good approximation and suturing are necessary where early use is to be made of the part in order to secure the benefits of functional irritation. In case the transplant lies very near the surface the skin incision should be so placed as not to fall directly over it; necrosis and infection are less apt to result. Extensive scars should be excised from a field if possible before transplantation into it because their poor blood supply is likely to interfere with the reestablishment of circulation in the graft. A successful clinical result does not necessarily mean that all of the transplant lived, for, as a rule, more or less of it undergoes necrosis.

The subsequent changes in the tissues when from a clinical standpoint transplantation has been a success are variable. The entire transplant may live and become united in its new position. This is usually not the case, but it is frequently seen in transplants consisting of fascia and tendons. Part of the cells of the transplant may die while the rest live and hypertrophy, forming new tissue, which gradually absorbs and substitutes the necrotic portions. In bone with its periosteum and endosteum intact the bone cells of the compacta die but the periosteum and endosteum survive and form new bone which gradually replaces the dead portion. Again, the entire transplant may die and substitution occur by an ingrowth of like tissue from the surrounding portions, as in the case of a successful heteroplastic tendon transplantation. The subsequent changes in a transplant which fails may be any one of the following:

1. There may be immediate sloughing out from infection and death of the transplant.

2. The transplant may heal in at first, but after weeks, evidences of mild infection develop and a fistula forms. The infection usually increases until finally the transplant which has died sloughs out or has to be removed.

3. The transplant takes at first, but its cells are slowly absorbed or replaced by connective tissue.

The fate of tissues transplanted into locations where they have no function to perform, as, for instance, bone or tendon into the subcutaneous tissues, is usually that of gradual absorption.

SKIN TRANSPLANTATION

There has been little advance during recent years in the field of usefulness of transplanted skin, but, as a result of the researches of Lexer, our ideas as to the relative value of the different types of transplants and of materials from different sources have been more definitely formulated. The type of graft indicated varies according to the location of the area to be covered and as to whether or not a movable skin is desired. Epidermal grafts, cut according to the Thiersch method, are the most successful and best suited for the great majority of cases. They may be cut in the largest possible strips.

The preparation of the surface for receiving the grafts should vary according to the nature of the wound. If it is covered by healthy dry granulations, the grafts may be applied directly with almost no preliminary curettage. However, if conditions are not just right, and this includes the bulk of cases, the entire surface should be curetted and careful hæmostasis obtained before the grafts are applied. The extravasated blood should be allowed to clot upon the surface, after which firm pressure is applied with gauze and the clot is forced out. This leaves behind a coat of fibrin upon which the grafts are applied and to which they adhere firmly. The character of the dressing is of little importance provided the operation is properly done and the grafts are not too much disturbed. In case the wound is located about the face and a movable skin is desired, the result is best obtained by transplantation of the entire thickness of the skin, including the subcutaneous fat. Because of the rich blood supply such transplants take in the great majority of cases. Grafts including the entire thickness of the skin are more often successful if the subcutaneous fat is cut away, which can be done either at the time of or after their removal. However, they are firmly bound down and are more suitable for use about the hands, etc.

The source of the material is of much greater importance than was formerly supposed. According to Lexer, autoplasmic grafts are the only ones in which the epidermis lives and forms a permanent covering for the area.

Heteroplasmic transplantation is a failure. The grafts usually slough off shortly after their application. Davis has reported success with skin taken from young pups, and Bianchi and Fiorani with that from young chickens, but Lexer says it remains alive and attached only for a short time, after which it acts as a crust under which healing occurs but without the formation of any epithelial covering from the transplant.

Homoplasmic transplantation has been the subject of a great deal of discussion. Thiersch, Garré, Enderlen, and Karg have maintained that it is unsuccessful, while many others have reported success in a certain percentage of cases; J. S. Davis claims equally good results with autoplasmic and homoplasmic grafts. In recent years Lexer has performed a series of homoplasmic transplantations and has arrived at the following conclusions:

1. Skin transplanted from one adult to another sloughs off in a short time.

2. Skin from a parent, brother, or sister may take temporarily but eventually sloughs off.

3. Skin from a foetus may take and remain adherent but undergoes necrosis and is substituted by the ingrowth of fibrous tissue from beneath.

The course of homoplasmic grafts may be any one of the following:

1. Acute necrosis with gangrene of the transplant. This is a very common result.

2. The grafts take at first but after one or two weeks are totally discarded with the formation of a layer of pus and granulations beneath.

3. The grafts take at first but after three or four weeks undergo necrosis and dry gangrene, forming a thin dry crust, beneath which, healing occurs by scar formation.

4. The grafts take and at the end of three or four weeks seem firmly fixed. Then areas of slight desquamation develop. Fibrous granulations now grow in and substitute the transplanted tissue without any appreciable amount being cast off. In no case was an epithelial covering for the area formed from the cells of the transplant. He explains the persistence of pigmentation when negro skin is transplanted on to a white man, on the ground that while the cells are rapidly absorbed the pigment remains and is removed very slowly. These transplantations were controlled by microscopical examinations of excised portions, which add considerable to their value. Oshima, in Lexer's Clinic, has recently reported upon the histological examination of homoplasmic grafts, including the entire thickness of the skin both in man and in animals, and has found that while the grafts become attached and live for two or three weeks they eventually undergo necrosis and either are absorbed or slough off.

MUCOUS MEMBRANE TRANSPLANTATION

Conditions for success are not nearly so favorable in the transplantation of mucous membranes as they are in the transplantation of skin. The application of a dressing is never possible and infection is very apt to occur because of the

exposed condition of the graft. Rubbing against the opposing surface is inclined to produce displacement and the bathing of the graft in a continuous secretion may cause it to float away. The only clinical use so far made of mucous membrane grafts has been with the squamous-celled mucous membrane of the mouth, which has been successfully employed in the repair of defects of the conjunctiva.

There had been little investigation made on the subject of the transplantation of cylindrical and columnar-celled mucous membrane until Lexer used successfully the vermiform appendix from the same person for the repair of a defect in the urethra after the excision of a stricture. This has been followed by the work of Streissler, who used the appendix for the restoration of the urethra in cases of hypospadias. Axhausen has studied the fate of the mucous membrane of the stomach and bladder in dogs in autoplasmic, homoplasmic, and heteroplasmic transplantations. The grafts included mucosa, muscularis mucosæ, and submucosa which were transplanted on to the peritoneal surface over the stomach or bladder, where they were stitched in place with catgut sutures. They were examined from 14 to 70 days later. Heteroplasmic grafts from the rabbit were used four times with rapid death and absorption of the grafts in every case. In ten homoplasmic transplantations the grafts all died and became surrounded by granulation tissue. Absorption of the epithelial portion of the graft was rapid but the muscularis and connective tissue persisted for a much longer period, giving to the transplant the appearance of an incompletely organized scar.

In the autoplasmic transplantations the results were quite different. The mucous membrane remained alive in all 16 experiments and possessed a marked tendency for proliferation, leading to the formation of multiple cysts, some of which in the two months old specimens reached the size of an egg. In none of Axhausen's specimens was mucous membrane transplanted into a location where it had a function to perform, so that the influence of functional irritation upon the course of the transplant has not yet been tested experimentally. Not enough cases have been reported for one to judge as to the value of the mucous membrane of the appendix in the repair of the urethra in operations for stricture and hypospadias. However, if such operations are attempted, from Axhausen's experiments it would seem advisable to rely only on the mucous membrane of the patient's appendix for the source of material.

FAT TRANSPLANTATION

Because of its low degree of specialization and relatively poor blood supply, fat would appear to be one of the easiest tissues in the body to transplant successfully, and the results, both of the operations in man and of experiments in animals, prove this to be the case.

Transplants of fat have long been used for filling out defects about the head, but it has been only within the last few years that their use has been extended to other regions of the body. Experiments have been performed to determine the fate of the different kinds of grafts.

Autoplasmic transplants, in both man and animals, were studied in 1912 by Makkas. He found that in a part of his experiments in which fat was transplanted into bony cavities practically the whole transplant took and became attached but that later on there was proliferation and contracture of the interlobular connective tissue. In the others there was considerable breaking down of fatty tissue and marked increase of the fibrous elements, so that eventually in some cases the fat was largely replaced by scar tissue.

Homoplasmic transplantations into the lumbar region of rabbits have been carefully studied by Rehn. He found that they were easily infected and that the grafts frequently sloughed out despite the most careful asepsis. The majority took and became attached to the surrounding tissues. Shrinkage was noticed after the fourth week and continued until in the oldest experiment at the end of 24 weeks the size of the transplant had diminished one-third. Softening and small cyst formation were noticed about the periphery of the grafts after the tenth week, but the central portions appeared to be, if anything, somewhat firmer than normal. Microscopically the interlobular connective tissue was seen to be hypertrophied in the younger specimens and transformed into dense fibrous tissue in the older ones, giving to the transplant an indurated character. The fat of the fat-cells gradually underwent necrosis, broke up into globules, and was either removed or collected into islands, which formed the oily cysts about the surface. The central portions of large transplants also underwent necrosis. Fat is regenerated by the proliferating fat-cells which survive and by other new cells which seem to come from the interlobular connective tissue. At first their fatty content is small, but it gradually increases until at the end of 24 weeks the amount in each is more than half of the normal. Giant-cells and phagocytes are seen actively engaged in removing the broken-down portions of the transplant. These experi-

ments show that only a part of the transplant lives, that its fibrous content is increased, and that new fat is gradually formed to take the place of that which breaks down and is absorbed.

Clinically, fat has been successfully used by Rehn, Czerny, Neuber, Lexer, Bier, and others for filling out defects about the face caused by injuries and infections resulting in destruction of bone and depressed scar formation, as after frontal sinus and mastoid operations, depressed fractures, etc. The scar is dissected loose through a small incision and strips of fat from the abdominal wall stuffed into the defect. In ophthalmology, fat has been used to fill out the orbit after enucleation of the eye, and, according to Verderame, with good results in Axenfeld's clinic for the past 15 years. Barraquez, Marx, and others have used fat to fill out the bulb of the eye after evisceration, but, according to Marx, it does not remain alive because of the poor opportunity for the reestablishment of circulation; connective-tissue substitution occurs. The breast region has been filled out by the transplantation of a lipoma by Czerny, Lexer, and others.

In recent years the extensive use of fat from the abdominal or gluteal regions for filling out bone cavities, the result of osteomyelitis, myeloid, sarcoma, bone cysts, and tuberculosis, has been reported by Makkas, Klopfer, Krabbel, Rehn, and others. The diseased focus is thoroughly cleaned out and hæmostasis is obtained before the fat is inserted; the wound is closed without drainage. The results have been variable. In aseptic wounds the transplant usually takes, but where fistulæ are present sloughing out is the rule. Bone very slowly takes the place of the fat in those cases which have been traced for some time after operation. Fat behaves very much the same as a Morhof-Mosetig plug, with the one advantage that it may eventually be substituted by new bone. The use of a fat and fascia transplant in arthroplasty, in brain and dura defects and for surrounding sutured nerves and tendons will be spoken of under fascia transplantations.

FREE TENDON TRANSPLANTATIONS

Since the advent of modern surgery, occasional attempts at the repair of defects in the course of tendons by the free transplantation of tendon have been made. Gluck demonstrated its feasibility in 1881 and Heuck its practicability in 1893. However, plastic operations upon tendons were performed chiefly by means of dead foreign materials, such as silk, catgut, and silver wire, until the recent researches of Kirschner, Rehn,

and Lewis and Davis excited new interest in the subject of direct tendon transplantation and led to its more extensive application.

The fate of transplanted tendon has been determined by the above-mentioned writers and most accurately by Lewis and Davis. The behavior of autoplasmic and homoplastic grafts is very similar, with the advantage in favor of the former, so that they will be considered together. A marked difference was found between tendon transplanted into the subcutaneous tissues and that which was transplanted and sutured into a tendinous defect where it was called upon to functionate. The cells of the former retained their vitality and stained well, but there was not a sign of proliferation to be seen. After a number of days, shrinkage into a small ball of tendinous tissue was the invariable result. This shrinkage is due to disuse analogous to the atrophy which occurs in a paralyzed limb. On the other hand, where the position of the transplant was such that it had a function to perform, its cells not only remained alive but it rapidly increased in size and became united to the ends of the tendon. This increase in size was due to some extent to oedema of the transplant from imperfect circulation, but chiefly to a marked proliferation of the cells of the peritendinium externum and peritendinium internum forming a mantle surrounding and partitions throughout the transplant. There were some degenerative changes in the tendon, the fibrillæ being swollen and gnarled, with small areas of hyaline and granular changes. These proliferative and regressive changes were most marked during the second to the fifth weeks, after which the tendon rapidly diminished in size and by the end of 59 days had practically returned to normal. These two sets of experiments show the importance of functional irritation for the occurrence of hypertrophy, rapid union, and metamorphosis of the transplant. Hence the necessity for careful and firm suturing and early use of the repaired tendon as emphasized particularly by Lexer and Lewis and Davis.

Clinically, free transplantation of tendon has been used almost entirely for filling in defects in the course of the long flexors and extensors of the hand resulting either from accidents or phlegmons of the hand. Lexer and Rehn have reported upon 8 cases treated in the Jena Clinic by this method. Tendon from the same individual used for homoplastic transplantation has not worked so well in man as in animals. A quadriceps tendon in a knee-joint transplantation was repaired by homoplastic transplantation of the Achilles tendon with subsequent sloughing out of the tendon and

infection and loss of the limb. The transplants for the hand tendons are taken from the palmaris longus through two small incisions above and below. In case of the flexor tendon an incision should be made in the palm and its proximal end isolated and sutured to one end of the transplant. Then the skin is undermined with an elevator clear to the finger tip, where a second incision is made, and a probe, with an eye at the end, is carried back through the tunnel; a ligature, to which the free end of the transplant is fastened, is threaded through it, and the tendon is then pulled into the tunnel, where it is fastened to the bone at its free end. Early movement is begun and surprisingly good results have been obtained, as were shown by photographs accompanying the communication. Kirschner prefers strips of fascia to free tendon transplants and claims that the fascia becomes transformed into tendon. Lewis has used a fascial tube in the same way, but has shown by examination of the excised portion that it acts as a guide for tenoblasts which grow out from either end of the tendon and restore its continuity. Under favorable conditions the fascia may be transformed into the tendon sheath.

FASCIA TRANSPLANTATION

Kirschner, in 1909, was the first to demonstrate the viability of transplanted free fascia, and since that time it has been used clinically in a great variety of conditions, principally for the repair of defects in mesoblastic structures. The fate of autoplasmic and homoplastic grafts in animals, as shown by the studies of Kirschner, Lewis and Davis, and J. S. Davis, is approximately the same, but Kirschner, from an analysis of clinical results in a recent article, gives a very decided preference to the autoplasmic graft for use in human beings. When transplanted into almost any tissue or on the wall of any aseptic cavity of the body the transplant lives and becomes united to the surrounding tissues. If, in this new location, it is not subjected to any movements or strain, shrinkage and some connective-tissue degeneration occurs, converting the fascia into a scar. When transplanted into a defect where tension is thrown upon it the functional stimulation maintains its normal size or may even lead to hypertrophy. The two sources of the material most often employed are the fascia lata of the thigh and the rectus abdominus sheath from which the fascia may be taken for use during abdominal operations.

As to the undoubted uses to which transplanted fascia may be put there is still a great deal of doubt, since most of the operations have been

performed in recent years and sufficient time has not yet elapsed in which to judge of their results. Kirschner, whose seems to be championing its cause, has recently published a comprehensive review of the subject, and the extensive uses to which he puts it in the repair of defects and deformities in various parts of the body border well on the fantastic. In repairing divided tendons he recommends that, after suturing, a cuff of fascia be applied about the line of suture in order to prevent the formation of adhesions. Defects in the course of tendons may be repaired by a bridge of fascia which is folded about and sutured to the liberated ends, as related in connection with tendon transplantation. Kirschner reports some good and other bad results obtained by this method.

Ptosis may be corrected by the transplantation of a band of fascia which runs subcutaneously from the tarsus below to the occipitofrontal muscle above. The appearance of the face in case of facial nerve paralysis has been improved by anchoring the region of the angle of the mouth to the zygoma. Kirschner recommends a band of fascia for this purpose.

Kirschner recommends the use of fascial transplants for fixation purposes in certain cases of flat-foot and other foot deformities and in habitual peronæus tendon, patellar, and shoulder dislocations. He has also made use of them for the fixation of organs, as in nephropexy and orchidopexy in cryptorchism, but the advisability of resorting to any of these procedures seems doubtful.

Fascial strips have been used to tie around the pylorus for closure in case of gastro-enterostomy in which the diseased process has not produced a narrowing of the stomach outlet. Experiments by Bogaljuboff have shown that while this does not completely obstruct the lumen it produces more of a permanent constriction than anything else that has been tried. Wilms claims that this is due to the gradual shrinkage which the fascial band undergoes. Necrosis with cutting through and escape into the lumen does not occur, as is the case with non-absorbable ligatures, such as silk and silver wire.

Thöle, Enderlen, Kirschner, and others have used sheets of fascia for the repair of large ventral and occasionally of inguinal and femoral herniæ, and Payr for patching large defects in the parietal pleura, the result of extensive resections of the chest wall. In a few instances fascial flaps have been sutured over ruptures of the liver and spleen for controlling hæmorrhage. For many years attempts have been made to reinforce sutures of

the cesophagus, stomach, and intestines applied after perforation or resection by covering them over with living tissue. Senn first used omentum for this purpose in 1888, and since then it has been used frequently. König has recently tested out both experimentally and clinically the value of fascia for this purpose and has obtained satisfactory results. Wounds of the ureters have been repaired, both clinically and experimentally, by the use of fascia, but the results have been unsatisfactory, as stricture formation and hydro-nephrosis nearly always result. Lewis and Davis have successfully used fascia for the repair of defects of the common bile duct in dogs. A flap of fascia lata was sutured about either end of the divided duct and then into a tube. Marked dilatation of the fascial tube occurred forming a sac about the size of a gall-bladder, but the duct remained patent.

Defects of the dura resulting from compound fractures, the removal of tumors, of scars and adhesions in epilepsy, etc., have been repaired extensively by Eiselsberg, Lexer, Körte, Payr, Lewis, and others with transplants taken from the fascia lata. In epilepsy, particularly, a combined fat and fascia transplant has been given the preference. The results of this procedure are somewhat uncertain as yet.

Sutured nerves have been surrounded by a cuff of fascia and defects in their course have been bridged over with the idea of conducting the outgrowing fibers of the proximal end into the distal portion.

In the mobilization of ankylosed joints, free and pedunculated flaps of various compositions have been placed between the ends of the bones to prevent the recurrence of fibrous or bony union and to aid in the formation of a new joint cavity. Of these agents, which include fascia, fat and fascia, muscle and prepared animal membranes of various sorts, fascial or fat and fascial flaps have proved to be the most satisfactory both in animal experiments, such as those of Sumita and Allison and Brooks, and in operations on man, as shown by the results of Murphy, Payr, and many others. According to Allison and Brooks there is no difference in behavior between a free and a pedunculated flap of fascia when placed between the ends of the bones. In both instances the flap undergoes necrosis and absorption, but by causing exudation and separating the ends of the bones for from two to four weeks, it permits of the formation of a fibrous coat over each end, and a capsule partly re-forms, leaving a joint cavity filled with a slightly bloody or serous fluid. Without the implant, less exudation occurs and

fibrous union between the bony ends results. Heteroplastic substances interposed, such as Cargyle membrane, chromacized pig's bladder, etc., are more rapidly broken down, cause much more reaction and exudation and stimulate an overproduction of connective tissue (or callus) from the ends of the bones, resulting in a fibrous union which later on may ossify. On the other hand, Sumita claims that while the free transplant breaks down and disappears, nearly all of the pedunculated flap lives. The flap as a result of squeezing and crushing between the movable ends of the bones becomes cedematous and hæmorrhagic and undergoes hypertrophy in some portions and necrosis in others. All this leads eventually to the formation of one or sometimes more cavities in the transplant, the walls of which thin out and become attached to the ends of the bones and to the newly-forming capsule and a new joint is slowly formed. It is very similar to a ganglion in the structure of its walls and its mucoid contents. Microscopically, the wall consists of fibrous tissue without any endothelial lining. However, Murphy reports re-formation of a synovial lining in the joint of a dog operated on by him in this same manner. Clinically, the use of pedunculated flaps has been much oftener resorted to and has given the most satisfactory results.

BONE TRANSPLANTATION

It is in bone surgery that tissue transplantation has found its most extensive field of usefulness. The feasibility of bone transplantation was first demonstrated by Ollier in 1858, and it has been employed clinically with increasing frequency ever since. During the past eight or ten years this increase has been particularly marked, and the extensive statistics of Murphy, Albee, Lexer, Streissler, and others testify to the satisfactory results which have been obtained. Great interest has centered about the two points as to what the composition of the transplant should be and what is the fate of the transplanted bone. Ollier thought that when autoplasmic bone plus periosteum and endosteum was transplanted into a bony defect where it had a function to perform the entire transplant lived, and this view has been upheld in recent years by Macewen and McWilliams, although they offer little microscopical evidence in its support. In 1892 Barth claimed as a result of his experiments that the entire transplant died and underwent substitution by an ingrowth from the surrounding proliferating bone; in other words, the transplant acted merely as a scaffold. Murphy now holds this view, but

he has offered no histological examinations in support of it. Barth has now rejected it in favor of the views of Axhausen, who, as a result of extensive experiments, concluded as follows:

The periosteum and endosteum of the transplant remain alive, while all of the bone cells except a few about the cortex undergo necrosis and absorption. The periosteum and endosteum proliferate and produce callus, which takes part in the formation of union between the ends of the transplant and the bone into which it is transplanted. They also supply the cells which grow into the Haversian canals with their revascularization, absorb the old bone, and deposit new in its place. Thus, eventually, the dead cortex is substituted by new bone formed from the osteogenetic cells of the transplant which live. When the periosteum is removed, callous formation and substitution are both delayed because the chief source of osteogenesis from the transplant itself has been removed. Whatever substitution of the dead portion occurs from the transplant's own surviving cells then comes from the endosteum and the few surviving superficial cells of the cortex. These views have practically been substantiated by the extensive histological studies of Frauchenheim, Cotton and Loder, and myself. I have found that even where both periosteal and endosteal surfaces were whittled away there is some callous formation on the ends of the transplant, and although after 75 days absorptive changes predominated there was some slight substitution of the old cortex by bone that had formed from a few surviving cortical cells. In a transplant with periosteum and endosteum on it is quite plain that the callus formed at the two ends and the substitution which goes on within the dead cortex comes from the surviving cells of the transplant, because, at the end of 40 or 50 days, the amount of bony callus about the transplant is large and substitution is well under way while both intermediary calluses at the ends are fibrous, thus ruling out completely the possibility of osteoconductivity from the ends of the fragments.

The ingrowth of new bone from the ends or surrounding portion into which the transplant is placed, which new bone substitutes the dead portion, may occur if there are no osteogenetic cells on the transplant, as in case periosteum and endosteum are removed or die, either as a result of infection, or the cutting off of nutrition, by a surrounding hæmatoma. However, this is the exception, and the great bulk of the transformation which occurs in a transplant even with its periosteum removed is accomplished by the activity of its own surviving osteogenetic cells.

When bone is transplanted into the soft parts the conditions of nutrition are the same and the same portions survive or die as in transplants placed into bony defects. But regenerative and transformative changes are entirely different, in accordance with Roux's law of functional irritation. The bone in the soft parts has no function to perform, hence it usually produces little or no new bone and is gradually absorbed or becomes encapsulated; detached periosteum usually meets with the same fate. In my experiments with periosteum from the ulna transplanted into the thigh muscles nothing more than a millet-seed-sized mass of bone ever formed. In McWilliams' experiments with costal periosteum transplanted into the abdominal muscles extensive new bone formation occurred in some cases. It is a question if the abdominal respiratory movements may not serve as a functional irritant to such transplanted costal periosteum resulting in the new bone formation. That periosteum in its normal position possesses bone-forming properties has been demonstrated beyond a doubt by numerous workers such as Cornil and Coudray, so that the claims of Macewen are not to be taken seriously.

The uses that have been made of transplanted bone are too well known to call for little more than enumeration. Defects in the course of bones, the result of traumatism, tumors, bone cysts, etc., may be filled in with a transplant of any dimensions provided the conditions necessary for a successful transplantation are present. Sievers has transplanted an entire bone, using a foot phalanx to take the place of finger phalanx excised for sarcoma. Old ununited fractures are best treated by bone transplantation. The introduction of a medullary splint as used so extensively by Murphy is the best form of operative procedure, although an external splint or the inlay method of Albee may also give good results.

Bone transplants may be used to produce ankylosis of joints or arthrodesis. Lexer introduced this method for fixing the ankle-joint at right angles in cases of paralytic club-foot, but according to the reports of Schewandin from Bier's Clinic it has not given as satisfactory results as those obtained by the Albert operation. Kanavel has used the same procedure for the production of ankylosis of the knee in cases of Charcot's joint in locomotor ataxia. The best form of transplant is one from the same person and containing both periosteum and endosteum. Homoplastic transplants are successful, but not as many of the osteogenetic cells remain alive and actively proliferate as in autoplasmic grafts.

Heteroplastic grafts behave in the same manner as dead bone.

MUSCLE TRANSPLANTATION

Free transplants of muscle regularly undergo degeneration, as the cells are too highly differentiated to withstand the nutritional disturbances resulting from cutting off of the blood vascular circulation. Muscle with everything severed except its nerve supply meets with the same fate. The changes which occur in the dead transplant are variable. Usually absorption occurs rather rapidly, but in other instances, where necrosis occurs slowly, some ossification of the area may result.

NERVE TRANSPLANTATION

The nervous tissue of a transplanted nerve undergoes necrosis and absorption, leaving the connective-tissue framework as the only surviving portion. It serves as a conductor for the regenerating axis cylinders. Hence the effect of a nerve graft is little different from that of a graft consisting of fascia or vein, and since autoplasmic nerve grafts are so difficult to obtain, suture materials, portions of veins, or tubes of fascia are used almost entirely in operations for the restoration of defects in the course of nerves.

BLOOD-VESSEL TRANSPLANTATION

The perfection of a satisfactory technique for the suture of blood-vessels by Carrell, Guthrie, Horsley, and others has led to extensive studies on the transplantation of segments of one vessel into defects of another. The changes in such an artery or vein transplanted into an arterial defect with its completely severed vascular and nervous connections are as follows:

Union at the two ends is by fibrous tissue formation with complete encapsulation of the sutures. Gradual dilatation of the transplanted vessel occurs with thickening of its wall. This dilatation is more marked and occurs more rapidly with a venous than with an arterial transplant. After a certain time the condition becomes stationary and a venous wall thickens relatively more than an arterial. The mechanical functioning may remain good for an indefinite period even in the case of a venous transplant. Live heteroplastic, cold storage, and chemically-fixed transplants serve almost as well as autoplasmic and homoplastic grafts. The histological changes which the grafts undergo have been studied by Carrell, Guthrie, Borst, Enderlen, and others and are as follows:

In the autoplasmic and homoplastic grafts the

muscular and nervous elements undergo necrosis. The connective-tissue elements very largely live and proliferate to some extent, thus increasing the thickness of the vessel wall. Muscle is gradually absorbed and substituted by connective tissue from the surrounding tissue, the ends of the vessels, and the surviving portion of the graft, so that the vessel is gradually converted into a dilated fibrous tube. The endothelial lining of the transplant, according to Borst and Enderlen, dies and is replaced by an overgrowth past the lines of suture from the ends of the vessel. The tissues of heteroplastic and chemically-fixed transplants are gradually completely substituted by ingrowing connective tissue.

The clinical application of vessel transplantation into vascular defects has been very limited. Goecke and Mantelli report the successful use of the saphenous vein for repairing defects of the popliteal and femoral arteries. Blood vascular grafts have been used by Payr and others, in place of the Mikulicz's silver tube, in an endeavor to establish a permanent connection between the lateral ventricle and the subdural space or the jugular vein for the drainage of hydrocephalus. The operative mortality has been high and the results discouraging. The long saphenous vein has been used by Makkas, Tanton, Unger, and Becker to take the place of the urethra in hypospadias and stricture operations but with poor results.

Wrede and others have used pieces of vein to repair defects in the course of nerves with the idea of obtaining an outgrowth of fibers along the lumen of the vessel.

PARATHYROID TRANSPLANTATION

As soon as it was discovered that post-operative tetany was the result of the absence of parathyroid secretion attempts were made to cure it by the transplantation of parathyroids. This has led to a great deal of experimental work, despite which and the meager clinical attempts there is still some degree of uncertainty as to the usefulness of parathyroid transplantation. Halsted, Cristiani, Biedl, Leighton and Swarts, Leischner, and others have studied experimentally the effects and course of both autoplasmic and homoplastic transplantations in animals where parathyroid tissue was either normal, deficient in amount, or totally lacking. It is agreed, except for Halsted, that both homoplastic and autoplasmic transplantations are successful, the latter being more frequently so. After total extirpation of the parathyroids a permanent cure of the resulting tetany by the autoplasmic or homoplastic transplantation of parathyroids has never been

effected; brief temporary relief has been obtained but the animals soon die of emaciation and tetany. According to Halsted, when the host has more than one-half the normal amount of parathyroid tissue and where there is enough internal secretion so that there is no parathyroprivia neither autoplasmic nor homoplasmic grafts will take, but they undergo necrosis and absorption. However, if more than one-half, or enough parathyroid tissue is removed so that there is deficient parathyroid secretion—but not complete absence—the excised parathyroid tissue, if reimplanted at the time, will take and help either to cure or keep the animal alive for an indefinite period. Halsted claims that only one of any number of such transplanted parathyroids lives and functionates. If, after sufficient time has elapsed for the graft to take, the remaining parathyroids are excised, the transplanted one may be sufficient to keep the animal alive for an indefinite period—15 months in one of Halsted's cases—and even free from symptoms of tetany during a greater part of the time. He had no success with homoplasmic grafts in dogs.

If Halsted's results are correct, they serve as a good illustration of the importance of functional irritation for the success of a transplant. Biedl obtained quite different results. He claimed to have successful transplantations in the presence of a normal amount of parathyroid secretion and also believed that several transplanted parathyroids may remain alive and that homoplasmic transplantations are successful. The transplantations have been made with about equal success into the thyroid, subcutaneous fat, sheath of the rectus abdominus, spleen, and bone marrow.

The clinical results in post-operative tetany in man obtained by transplantation of parathyroids, always from another person, have been variable. There are more than a dozen such cases on record in nearly all of which the parathyroids on one side had been removed in connection with lobectomy for goiter. In most instances there were symptoms of mild chronic tetany and Von Eiselsberg, Krabbel, Bose and Lorenz, and Danielsen have reported complete disappearance of symptoms in from a few weeks to months following the transplantation. Pool, Kocher, and Czerny have obtained only partial relief in their operated cases.

THYROID GLAND TRANSPLANTATION

Transplantation of the thyroid gland is of less interest from a surgical standpoint because in case of thyroprivus from whatever cause, much

better and more lasting results can almost always be obtained by organotherapy than by transplantation of gland tissue.

Von Eiselsberg was the first to successfully transplant thyroid tissue, and since then there have been a large number of workers who have made almost every possible variation as to the nature and location of the transplant. The subcutaneous tissues, rectus abdominus muscle, and peritoneum are favorable sites for the transplantation. Payr has transplanted into the spleen and Kocher into the metaphysis of the upper end of the tibia, but with no special advantage over the other locations. The fate of the transplant is:

The graft becomes attached in its new location and blood-vessels grow into its peripheral zone where the cells remain alive and the follicles largely retain their structure. Farther from the periphery, necrosis develops and about the center of the transplant there is complete degeneration. Proliferative changes then occur in the living peripheral zone and a considerable amount of new thyroid tissue is formed while the central portion becomes converted into a connective-tissue scar.

Cristiani demonstrated that a transplant healed in and proliferated more quickly in a thyroprivic than in a normal animal. Autoplasmic transplantations have been much more successful than homoplasmic. Transplanted thyroid tissue functionates for a time, but unfortunately in man after months or two or three years the transplant is absorbed and the thyroprivic symptoms reappear. Payr, Birscher and Enderlen and Borst have transplanted healthy thyroid tissue into cretins with either no results or only temporary improvement and a complete return of symptoms after a few months or years. Better results can practically always be obtained by organotherapy than by transplantation.

Other glands and organs have been transplanted with temporary success but such transplantations are of no surgical interest.

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ABSTRACTS OF CURRENT LITERATURE

GENERAL SURGERY

SURGICAL TECHNIQUE

OPERATIVE SURGERY AND TECHNIQUE

Plondke, F. J.: Preparatory and Post-Operative Treatment. *J.-Lancet*, 1913, xxxiii, 685.

By Surg., Gynec. & Obst.

The author makes a plea for better and more thorough preparatory and post-operative treatment of patients and regrets that the man of large experience, who is most competent to administer and direct the treatment intelligently, is usually so actively employed with operative and other work that he is often compelled to entrust the after-care of his patients to indifferent, inexperienced, or otherwise incompetent assistants, who, in turn, are apt to delegate the nurse to report the condition and depend on her to apply the treatment. The patient, therefore, is often neglected or, at least, deprived of the attention his condition demands.

By preparation is not meant the old-time method of starving and purging for a week beforehand, with consequent impairment of the patient's strength, but a painstaking investigation of all the organs and functions of the body with appropriate treatment of any faulty conditions that may be found, postponing the operation, if possible, until the patient is fit.

The author recommends a restricted diet for two or three days before operation, with the administration of a cathartic twenty-four to thirty-six hours before operation.

Surgical shock is more easily prevented than cured and a close adherence to this theory gives better results than deferring treatment until symptoms appear. The author recommends normal salt hypodermoclysis before the operation is started, in those cases, in which there is a possibility of shock developing. In septic cases, and where the operation has been prolonged, proctoclysis by the drop method is begun one and a half hours after leaving the table. In the use of these measures in over a thousand cases, there has not been a single case of severe shock. No stimulants are recommended. The ordinary post-anæsthetic vomiting requires no treatment beyond rinsing the mouth, absolute quiet, and a hypodermic of morphine; if vomiting persists, the use of a stomach tube is recommended. For gaseous distention the author recommends enemas, change of position, and the rectal tube. If unrelieved, turpentine stupa or eserine salicylate are used. The best results have been obtained, however, by the use

of 20 ccm. hormonal, intravenously. If this fails, operative procedures are recommended.

Acute dilatation of the stomach, post-operative acidosis, and pneumonia are next discussed. The anodynes are recommended in post-operative pain, and the author believes there is no valid objection to their judicious use for the first twenty-four to forty-eight hours.

EDWARD L. CORNELL.

ANÆSTHETICS

Babcock, W. W.: The Dangers and Disadvantages of Spinal Anæsthesia. *N. Y. M. J.*, 1913, xcvi, 897.

By Surg., Gynec. & Obst.

The author introduces his article with a consideration of the general question of the innocuousness or safety of a given anæsthetic and states that it is a relative matter. No method of anæsthesia yet discovered is free from dangers or unpleasant consequences, but, as a standard for comparison, the universality of ether as a general anæsthetic makes it a natural basis, experiences clinically with other methods being judged by equivalent statistics. However, reports from limited sources on ether vary so in showing its mortality that exact facts are not easily known. From no deaths in 60,000 administrations to 1 in 500, and even, in one emergency hospital in a coal region, to 1 in 100, is an anomaly extremely hard to explain.

As to nitrous oxide, a recent demonstration of it in Babcock's clinic by an expert resulted in one death from the anæsthetic, one hemiplegia, one cortical palsy of the hand and forearm, and one circumflex palsy, out of six cases anæsthetized. Coming to spinal anæsthesia, he has collected 5,000 cases in which there were 11 deaths. He says many were handicapped patients; some had been given ether unsuccessfully; some were poor surgical risks for any method; while some had contra-indications for this method.

On morbidity, the author collates statistics on nausea and vomiting, albuminuria, post-operative pains, duration of the anæsthesia afterwards, headache, ocular and other palsies, and concludes that nothing found lays more morbid results at the door of spinal anæsthesia than of ether. On cautions to be observed, he emphasizes aseptis of course; selection, position, and movement of the patient; repeated injections; preventing the breaking of the needle; and, on other points, he comments on consciousness of the patient, moralé of the operating

room, inability to properly introduce the solution.

He recites experiences to illustrate the dangers, advantages, and disadvantages in the method, with the following conclusions: In his hands ether and spinal anæsthesia have been about equally dangerous; in unskilled or careless hands the latter is undoubtedly more dangerous; morbidity from spinal anæsthesia is less; ocular palsies are due to faulty solutions; lumbar, to faulty injection; neurotic symptoms are not more common than with ether; maintenance of position for half an hour after injection is vital; repeated injections are harmless. Contra-indications are circulatory subtenion, great depression of respiratory centers, shock, collapse, myocarditis, and intrathoracic effusions. Operations in the upper abdomen are more dangerous than in the lower. The newer methods of anæsthesia, spinal anæsthesia, nitrous oxide-oxygen, intravenous ether, should have their use restricted to selected cases and administration by qualified anæsthetists. For general indiscriminate use ether remains the standard.

FRANK W. PINNEO.

Cathcart, E. P., and Clark, G. H.: The Influence of Carbon Dioxide on the Heart in Varying Degrees of Anæsthesia. *J. Physiol.*, 1913, xlvii, 393.
By Surg., Gynec. & Obst.

Cathcart and Clark have carried out extensive experiments on the effect of the administration of

varying mixtures of carbon dioxide and air to intact animals under varying degrees of anæsthesia. Several very instructive and important tracings are given, and they summarize their results as follows:

When the animal is lightly under the influence of ether—in all cases the animals are quite unconscious—the effects of the administration of carbon dioxide by the respiratory tract produces, with almost perfect regularity, a reduction in the rate and amplitude of the heart-beat. Whereas, when the animal is deeply under, that is, when the administration of the anæsthetic is pushed until the cardiac contraction is slightly affected, there is, at most, merely the slightest reduction in the rate and amplitude of the heart-beat and at times none at all.

The effect on the blood-pressure of giving carbon dioxide was very marked, in that a sharp rise of pressure of 30 to 40 mm. Hg. occurred when the animal was lightly anæsthetized, but there was no rise of temperature when the animal was deeply under. It is to be noted that the carbon dioxide was administered for a very brief period only. The possibility that the observed reaction, in the case of the animal lightly anæsthetized, was a protective phenomenon is not considered.

The work is good, but the facts presented do not justify the practical conclusion "that if anæsthesia is to be carried out with any degree of safety it must be deep."
WALTER M. BOOTHBY.

SURGERY OF THE HEAD AND NECK

HEAD

Mann, R. W., and Loudon, J.: Frontal Tumors. *Canad. M. Ass. J.*, 1913, iii, 1062.

By Surg., Gynec. & Obst.

The symptoms of frontal tumors are both general and local. The general symptoms are those referable to increased intracranial pressure and include headache, vomiting, optic neuritis, vertigo, and mental failure. The local symptoms of frontal tumors are rather confusing as a rule. The tumor usually involves one of the silent areas in the brain, and often it is impossible to absolutely locate the situation of the tumor. In some cases, there are noticeable changes in conduct, loss of power of orientation, morbid fears, anosmia, insomnia, amnesia, illusions, hallucinations, delusions, etc.

The varieties of tumors of the brain are as follows:

1. Glioma, chiefly found in the cortex, pons, or medulla, occurs chiefly in the middle-aged or young.
2. Sarcomata arise from the meninges, blood-vessels, or bone; they are the most common type in adults.
3. Tuberculoma is chiefly basal and especially in the cerebellum; it is by far the most common type in childhood.
4. Gumma is mostly seen at the base of the

brain or brain-axis; it is very frequent in adults.

5. Carcinoma is almost always secondary.

6. Parasitic cysts.

In connection with a general discussion of frontal tumors there is a report of a case of glioma of the right frontal lobe which came to autopsy. The personal and family histories of the patient were negligible; the initial symptoms were twitching of the limbs, followed by unconsciousness. Severe headaches and irrational talking soon followed and, in addition, the patient had difficulty in walking. The reflexes were normal except that the abdominal and epigastric were absent on the left side. The Wassermann test was negative, both on the blood and the spinal fluid. However, the patient was placed on mercury and the iodides and apparently was improving. Death, however, resulted, and the autopsy revealed a glioma of the right frontal lobe.

J. H. SKILES.

Von Eiselsberg, A., and Ranzi, E.: Surgical Treatment of Tumors of the Brain and Spinal Cord (Über die chirurgische Behandlung der Hirn- und Rückenmarkstumoren). *Arch. f. klin. Chir.*, 1913, cii, 309.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

This is an exhaustive report of all the operations of this kind performed for the last twelve years at

the surgical clinic in Vienna. Detailed case histories are given and all failures reported. Reports of operations on 168 cases of brain tumor show that of 75 cases of tumors of the cerebrum, 25 died from the operation, 21 died later, and there was no report from 5; of the 24 remaining ones, 9 recovered, 9 were improved, and 5 were not improved. Of the 16 hypophysectomies, 4 died soon after the operation, from meningitis; the rest were improved. Of the 32 cases operated on for tumors of the cerebellum, 17 died from the operation, and 8 died later. Of the remainder, 3 were cured, 2 improved, 2 not improved. Of the 17 tumors of the auditory nerve, 13 died from the operation, and 3 were cured; nothing is known of the other. Of the 28 palliative operations, 4 died soon after the operation; 7 died later, one being a suicide; 12 were improved; 5 not improved.

If the examination shows a decrease in the coagulability of the blood, the patient is treated for several days with calcium lactate. The resistance of the cerebrospinal fluid to infection is increased as much as possible by the giving of urotropine. The field of operation is injected with one-half per cent novocaine-adrenalin solution, less for its anæsthetic effect than to prevent hæmorrhage; ten minutes after the injection, a light ether anæsthesia is begun. Large flaps of skin, periosteum, and bone should be made so as to get a good view of the tumor.

Hæmorrhage from the bone is best controlled by driving in Japanese wooden pegs. Bleeding from the soft parts that cannot be otherwise controlled is tamponed; if hæmorrhage has not stopped at the end of the operation a tampon of living tissue, fascia, and muscle is formed.

Recently, the operation has usually been carried out in two stages, the second being done eight or ten days after the first. A cross-shaped incision is made in the dura in the opposite direction from that of the bone flap, and if there is any abnormality in the dura it should be excised until healthy tissue is reached; the tumor is then removed as carefully as possible with a spatula and the finger. Tampon and drainage should not be employed; it is better to make a very careful primary suture of the dura and skin, as the danger of meningitis and fistula is thereby decreased. If the dura is removed or there is difficulty in replacing the brain, a plastic procedure may be carried out with fascia lata. It is better to sacrifice the bone than to give up making a primary suture. The 24 successful cases of plastic operation give no reason to believe that the presence of the fascia causes epileptic attacks.

In operations on the cerebellum the bone is removed with Lane's forceps. In discussing the causes of the high percentage of failures, the relatively high percentage of cases of meningitis is noted, and this is attributed partly to deficient technique and partly to poor hygienic conditions in the clinic. The even more frequent cases of death from shock can be partly avoided by operation in three stages. Reports of operations for 17 tumors of the spinal cord are: 2 cases of death after the operation, 3 deaths

later, 3 cases cured, 6 improved, 1 unimproved, and 2 lost sight of. In 23 laminectomies for injuries, spondylitis, and for the sake of performing Förster's section of the roots, 3 deaths resulted after the operation, 5 deaths later, 9 improved, 4 unimproved. The technique consists of a one-stage operation under anæsthesia, after the injection of the field of operation with a novocaine-adrenalin solution; urotropine and calcium are also given. The patients are placed in the left lateral position and, after extensive removal of the vertebral arches, the cerebrospinal fluid is allowed to escape slowly. The dura and skin are carefully sutured, but no plaster cast is used.

KIRSCHNER.

Grey, E. G., and Emerson, L. E.: A Striking Acquirement of Visualizing Power and the Development of Dreams Following a Cerebral Tumor Extirpation. *J. Am. M. Ass.*, 1913, lxi, 2141.
By Surg., Gynec. & Obst.

The authors review a case in which Cushing removed an endothelioma of the dura over the right parietal region. The growth weighed 48.5 gm. and at no place did it seem to invade the cortex. The patient had never been able to visualize and in order to recall the faces of even her father and mother she had to consult their photographs. By a most tedious grind she could remember eight or nine lines of poetry or prose and then but for a short time. The night of the day of the operation, however, she had a dream which consisted of mental images; other visual dreams followed, at first simple, later quite complex. A number of these dreams are recorded, and some are psychologically analyzed. The morning following the operation she was able to make mental pictures of objects and persons in the room, a hitherto unknown faculty. Despite the fact that she had no visual memory or imagination prior to the operation, her vision had always been good up to the beginning of her illness, 15 months before the operation. **TORR W. HARMER.**

Stetten, D., and Rosenbloom, J.: Clinical and Metabolic Studies of a Case of Hypopituitarism, Due to Cyst of the Hypophysis with Infantilism of the Lorain Type: So-Called Typus Froehlich or Adiposo-Genital Dystrophy of Bartels. *Am. J. M. Sc.*, 1913, cxlvi, 731.
By Surg., Gynec. & Obst.

The authors review the work done in studies of the hypophysis, particularly as regards the metabolism of nitrogen, phosphorus, calcium magnesium, and chlorine in acromegaly. It has been shown that the carbohydrate tolerance is in no way affected by injections of the extract of the anterior lobe, although a general rise in metabolism is noted after the injection. None of the other experimental work which has been done can be compared with this study of a case of perversion of the pituitary gland, the case being a classical type of hypopituitarism, the opposite of acromegaly. The condition was due to cyst of the hypophysis with progressive bitem-

poral hemianopsia leading to optic atrophy and infantilism of the Lorain type. The patient was twenty-two years of age. It was noticed when he was ten years old that he was not growing normally; he complained of headaches which were severe; his eyes watered, and he could not read from the black-board at school.

His eyesight failed until he was practically blind; physical development was retarded; he was very irritable, with no indication of sexual power; there was no hair on his face, axillæ, or pubic region. He was fairly well nourished. His chief complaints were blindness, headache, and arrested development, he being about the size of a nine or ten year old boy.

Ossification of the bones of the hands corresponded to about that of a ten-year-old boy, as shown by the skiagraph. A skiagraph of the skull showed an erosion of the dorsum of the sella turcica and of the posterior clinoid processes, also an erosion of the posterior wall of the sphenoidal sinus.

After administration of urotropine and nasal irrigation, a Kanavel operation was done and a cyst whose contents was sterile was evacuated; following this there was extradural infection with profuse discharge, which seemed quite serious, but the patient fully recovered. Since leaving the hospital he has greatly improved; he has no headache, but his eyesight is not much changed on account of the already present optic atrophy.

A study of the metabolism results show a slight retention of nitrogen, while the absorption of fat and protein was not influenced and the percentage of the various urinary constituents were normal, with the exception of neutral sulphur and undetermined nitrogen, which are shown by the tables to be abnormally high.

H. A. POTTS.

NECK

Callison, J. G., and MacKenty, J. E.: Tumors of the Carotid Body. *Ann. Surg.*, Phila., 1913, lviii, 740.
By Surg., Gynec. & Obst.

The author first considers the carotid body from a general anatomical, embryological, and physiological viewpoint, as follows:

Anatomy. When present — usually between 20 and 30 years — the body is found, as a rule, a little posterior to the bifurcation of the common carotid artery and attached to either the internal or external branch by the "ligament of Mayer," through which it receives its blood supply. The nerve supply is from the vagus, glossopharyngeal, superior laryngeal, and superior cervical sympathetic.

The structure is alveolar and consists of groups of large, rounded or polyhedral, epitheloid cells, closely adjacent to the endothelium of the capillary tufts, called by the Germans "Zell-ballen."

Embryology. The view most generally supported is that of Zuckerkandl's, that these bodies are derived from the sympathochromaffin system anlage which buds off from the central nervous system in embryos of 20 to 30 millimeters. Similar cells are

found in the medulla of the adrenals, pituitary body, and sympathetic ganglia.

Physiology. Its not constant presence, the contradictory results of experimental work on blood-pressure, and lack of clinical observation, indicate that whatever the function may be, it is not important.

In the authors' case, an Irishman, 41 years old, with a negative family and past history, six weeks previous had noticed a hard tumor on the right side of the neck, preceded by loss of weight and strength. Three weeks later, he began to complain of difficulty in breathing and swallowing, aphonia, and pain in the throat.

Examination showed on the right side of the neck a hard, immovable, board-like tumor extending from the angle of the jaw to the clavicle, and from the thyroid gland well into the posterior triangle, with an absence of pulsation. The throat showed paralysis of the right cord with the larynx displaced to the left — Wassermann was negative.

At operation an elastic, lobular mass of reddish color was found so closely adherent to the common carotid artery, veins, and nerves of this region that complete removal was impossible. The portion anterior to the vessels, however, was dissected out and the wound closed with drainage. After three weeks of infection and hæmorrhages the patient died.

The pathological report showed typical findings of a tumor of the carotid body, probably endothelioma, but also diagnosed by competent men as carcinoma, sarcoma, and endothelial sarcoma, showing its complex structure.

Keen and Funke in 1906 collected 29 cases from the literature; since then Callison and Mackenty have found 31 new cases reported.

In these 60 cases 54 have come to operation; of these, 32 have recovered, and 22 died. In the 32 cases surviving, 3 have had hemiplegia with aphasia; 4, more or less dysphagia; 1, constant cough; 5, deviation of the tongue; 4, eye symptoms; and 4, more or less facial paralysis.

The tumors are most common between 20 and 50 years of age, and affect both sexes equally — beyond this very little is known.

The growths usually extend over a long period of time during which they behave as benign, giving rise to no symptoms other than deformity. Later, they may take on rapid growth and simulate a mildly malignant tumor, except in a lack of anæmia and cachexia. Their structure is various, having been classed with every form of malignant tumor.

In the early stage, except for deformity, there are no subjective symptoms. Later there is aphonia, difficult swallowing, some cough, and some pain in the throat.

The objective symptoms are: A firm, elastic, egg-shaped mass under the sternomastoid, movable laterally but not vertically; with a transmitted pulsation, but not expansile. Later, there is displacement of the larynx, paralysis of the cords,

congestion of the throat, and irregular pupils with failure to react to light.

The differential diagnosis is usually most difficult:

1. Cervical lymph adenitis is usually multiple, and surrounding tissues may be invaded. The subcutaneous tuberculin test and local reaction is positive.

2. In carcinoma there is a primary focus, nodes are multiple and rapid growing, and there is present cachexia and anæmia.

3. In sarcoma, several nodes are involved, there is no movement, and no transmitted pulsation.

4. Fibromata are more superficial, harder, and more movable.

5. Lipomata are more superficial, have a woolly feel, and are very movable.

6. Brachial cysts are, as a rule, congenital and fluctuating.

7. Hodgkin's disease is bilateral from the first and gives multiple nodes.

8. Aneurism has an expansile pulsation with a gurgling murmur over the tumor.

9. In syphilis there is a positive Wassermann and other evidences of the disease.

In closing, the authors recommend early entire removal, if the tumor is not closely adherent to the vessels and other structures in this vicinity; otherwise, they advise leaving it alone. Some surgeons recommend removal of the common, internal, and external carotids.

PHILLIPS M. CHASE.

Kraus, F.: Pathology of the Thyroid, the Parathyroids, and the Hypophysis and Their Mutual Relations (Pathologie der Schilddrüse der Beischilddrüsen, des Hirnanhangs und deren Wechselwirkung). *Deutsche med. Wchnschr.*, 1913, xxxix, 1921. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

In a paper read at the International Congress, in London, the author discussed the question of secretion in the thyroid and hypophysis. He again called attention to the storage of secretion in the thyroid, and to the experiments of Gottlieb, Trendelenburg, and Hunt, in which the similarity in the effect of blood from Basedow patients and thyroid extract shows the presence of a secretion with certainty. From a physiological standpoint, iodothyrim is to be regarded simply as the active component of the thyroid secretion. The effect of the thyroid hormone is to influence the continuous tonic innervation and at the same time the autochthonous vital processes of the tissues.

Kraus considers Basedow's disease a hyperthyrosis and believes that this is the right conception of it, but thinks it is probable that there is not such a radical opposition between hyper- and dysthyrosis as is generally supposed. He regards the involvement of the thymus, adrenals, and sexual glands as secondary. He gives the reasons for assuming that hyperfunction of the glandular lobe of the hypophysis is the cause of acromegaly. Finally, he discusses the relations of the internal secretory

glands to the central and peripheral nervous system, and asserts that, especially in Basedow's disease, there are a number of symptoms that are certainly of cerebral origin and that cannot be attributed to the sympathetic system. He discusses the correlation of the glands with internal secretion, and warns against assuming that the adrenal glands are the primary agent in all diseases with symptoms of pluriglandular disease. He calls attention to our very limited knowledge on the subject and gives a systematic arrangement of the diseases of the thyroid.

KOCHER.

Mayo, C. H.: Goiter: The Relation of Its Symptoms and Pathology. *Northwest Med.*, 1913, v, 334. By Surg., Gynec. & Obst.

Certain physiological facts concerning the thyroid are definitely known, though its exact function is still an unsettled question. Absence of the thyroid in young animals, either natural or experimental, markedly retards their mental and physical development and inhibits the maturity of sex. Total removal of the gland in the adult animal causes mental and physical deterioration resulting in a condition parallel to that known in man as myxœdema, a symptom-complex due to thyreoprivia. Experimental hyperthyroidism has not proved successful, though certain symptoms of toxæmia are easily induced by feeding thyroid.

Some cases of mild exophthalmic goiter recover spontaneously; others yield to careful hygienic treatment, which consists essentially of rest, quiet, mild exercise in the open air, reduced nitrogenous diet, etc. Specific medication has been largely based on the assumption that the symptoms are due to the absorption of a toxin from the gland, and efforts have been made to neutralize the toxin or to immunize the patient against its effect.

In relation to the surgical treatment of exophthalmic goiter of severe intoxication, it must constantly be borne in mind that a chronic condition, regularly presenting improvement followed by exacerbation of symptoms, is being dealt with. In the severe cases, growing worse, operation must not be performed. These cases are for a time medical, and emergent surgery is not indicated.

To prevent the possibility of tetany in operating on the thyroid, the parathyroid glands must be avoided and preserved, even if it be necessary to replace accidentally separated ones beneath the capsule of the thyroid at the pole of the gland.

Intrathoracic goiters and deep substernal goiters are of serious import, and are found about once in forty operations for simple goiter. Slight substernal projections are much more frequent. The diagnosis rests on (1) dull area on percussion, (2) the röntgenogram, and (3) evidences of substernal pressure.

Malignant tumors of the thyroid are not numerous. Less than one per cent of the cases operated on in our clinic show malignancy. Both cancer and sarcoma occur, the former with much more frequency. The diagnosis should, if possible, be made

before the growth has penetrated the capsule and involved the neighboring structures, for example, the trachea and muscles. The only treatment which affords any hope of relief is free removal of the entire thyroid tissue.

Baradulin, G.: The Morphological Composition of the Blood in Goiter and Basedow's Disease; and the Changes in It after Operation (Die morphologische Zusammensetzung des Blutes bei Kropf und Basedow und die Veränderung derselben nach der Operation). *Chir. arch. Veliaminova*, 1913, xxix, 680.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

In 18 cases, 10 of goiter and 8 of Basedow's disease, the author made morphological examinations of the blood, once before the operation and five or six times afterward, making an examination every second or third day until ten days after the operation. The hæmoglobin content was determined, as well as the number of the red and white cells, both absolutely and relatively. He concludes:

1. In goiter, without general symptoms, there are no changes in hæmoglobin and red blood-cells, while the white ones are also normal for the most part; the lymphocytes may be somewhat increased, as well as the mononuclears and transitional forms, and in many cases there is also eosinophilia. These changes in the white cells were only found in parenchymatous goiter.

2. In goiter, with general symptoms, there was a decrease in the hæmoglobin content, the red blood-cells were normal or only a little decreased; the number of whites was normal, but there was a relative decrease of the polynuclears and an increase of the lymphocytes and often of the mononuclears are transition forms; in many cases eosinophilia. These changes were more marked in three cases of Basedow's disease, but the author could not, like Kocher, demonstrate a decrease of the total number of white cells in every case, but found on the contrary an increase in many cases. As the changes in the blood picture are more pronounced in parenchymatous, proliferating goiter, and as they appear after the administration of thyroid substance, he believes the thyroid is a blood regulating organ. After the operation, there is a decrease in the hæmoglobin and erythrocytes, which in the course of a few weeks return to normal. The leucocytes increase for the first few days, the increase being in the polynuclears, while the lymphocytes decrease and eosinophiles disappear. HILSE.

Capelle, W., and Bayer, R.: The Thymus and the Thyroid; and Their Mutual Relations to Basedow's Disease (Thymus und Schilddrüse in ihren wechselseitigen Beziehungen zum Morbus Basedowii). *Beitr. z. klin. Chir.*, 1913, lxxvi, 509.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The authors take as the basis of their discussion three of their own cases of primary thymectomy, one

of which died with acute symptoms of intoxication. This is of special importance for investigators of the thymus have attributed acute death after thyroid operations to dysthymia. One of the two remaining cases, which was discussed in detail, was a moderately severe case of Basedow's disease with vagotrophical symptoms predominating, which recovered three months after the operation. The authors found two cases in the literature, those of Sauerbruch and Haberer, of thymectomy for strict indications in Basedow's disease. They also report 14 cases of Basedow's disease and 9 of goiter in tabulated form. By testing the tonus of the vagus and sympathetic, their aim is to learn more about the thymus in Basedow's disease.

Their discussion and conclusions are purely theoretical and schematical. The chief fact that leads them to conclude that the thymus is active in Basedow's disease is that the lymphocytosis in the blood does not always disappear after the thyroid operation; but it often remains and sometimes increases, the Basedow's disease, however, is curable. A second reason for the authors' assumptions is the decrease in the lymphocytosis after partial thymectomy; a third, of more weight, is the improvement of Basedow symptoms after thymectomy, which has only been observed absolutely in one of the author's cases.

From the theoretical schematical part of the work it appears that the authors believe that both thyroid and thymus secretions act upon the vagus and sympathetic, but in different degrees, sometimes the one sometimes the other predominating, sometimes both to the same extent. In the latter case the removal of either gland may cure Basedow's disease, in either of the two preceding cases the more active gland should be removed. They find some confirmation of their views in the histology of the two glands: Cylinder-cell proliferation of the thyroid or epithelioid proliferation in the thymus stimulate the sympathetic; while irregular-cell proliferation in the thyroid and eosinophile cells in the thymus stimulate the vagus; the improvement depending on removing the right gland. In conclusion, the clinical diagnosis of changes in the thymus is discussed; it is accomplished by percussion and röntgen examination of the gland and by testing the irritability of the sympathetic nervous system. KOCHER.

Wilson, L. B.: The Pathology of the Thyroid Gland in Exophthalmic Goiter. *Am. J. M. Sc.*, 1913, cxlvi, 781.

By Surg., Gynec. & Obst.

Wilson, continuing his previously reported studies on the thyroid, has recently reviewed the pathology of the thyroids from 1,208 patients operated on in the Mayo Clinic, for conditions ordinarily diagnosed as exophthalmic goiter, from January, 1905, to January, 1913, and also as controls of the thyroids from 585 patients operated on in the same clinic for conditions ordinarily diagnosed as simple goiter during the year 1912. Besides studying the gross

specimens, he has made a detailed analysis of the histology of the glands in fixed tissues and tabulated and summarized the results of his study to determine the relationship of the pathology of the thyroid to the clinical condition of the patient. His conclusions are as follows:

"1. A detailed pathological study of fixed-tissue preparations from 1,208 thyroids, removed from patients whose condition would ordinarily have been diagnosed exophthalmic goiter, showed that 79 per cent of the thyroids contained large areas of marked primary hypertrophy and hyperplasia. A parallel clinical study has shown that for a period of three years all cases with true exophthalmic goiter, and from whom gland tissue was removed, fall into this list.

"2. In the above series of 1,208 so-called "exophthalmic goiters" plus 585 so-called "simple goiters" or a total of 1,793 thyroids, but 4 instances of marked primary hypertrophy and hyperplasia of the parenchyma have been noted in cases which did not show clinical symptoms of true exophthalmic goiter. Three of these four patients were children.

"3. Twenty-one per cent of the 1,208 glands studied were either regenerations or adenomata. Clinically, while all of these were markedly toxic, all were chronic and none of them would now be grouped clinically as true exophthalmic goiter.

"4. By assuming that the symptoms of true exophthalmic goiter are the results of an excretion from the thyroid gland and by attempting to determine the amount of such excretion from the pathological data, one is able to estimate in a large series of cases the clinical stage of the disease with about 30 per cent of accuracy and the clinical severity of the disease with about 75 per cent of accuracy.

"5. It would therefore appear that the relationship of primary hypertrophy and hyperplasia of the parenchyma of the thyroid gland to true exophthalmic goiter is as direct and as constant as is primary inflammation of the kidney to the symptoms of true Bright's disease."

Blackford, J. M., and Sanford, A. H.: A Demonstration of a Depressor Substance in the Serum of the Blood of Patients Affected with Exophthalmic Goiter. *Am. J. M. Sc.*, 1913, cxlvi, 796. By Surg., Gynec. & Obst.

During the past year, the authors have conducted a series of experiments with a view to throwing further light on the relation of the secretion of the thyroid to exophthalmic goiter. They have studied chiefly the cardiovascular effects on the dog of intravenous injections of sterile non-hæmolytic blood-serum from nervous individuals and from patients affected with exophthalmic goiter. Numerous saline extracts of goiter have also been injected intravenously into dogs and the effects on the blood-pressure studied.

Gley, in 1911, announced that the serum of certain cases of exophthalmic goiter produces marked cardiac depressor action. He showed, too,

that a first injection of potent exophthalmic serum conferred a tolerance of such a nature that subsequent injections of the same serum during the same experiment produced little or no effect.

The authors have attempted to follow out Gley's researches, injecting intravenously into dogs the serum procured from patients affected with exophthalmic goiter. The effect on blood-pressure was recorded graphically on a long paper kymograph in the usual manner, using the left carotid artery for the arterial cannula. All injections were made into the right femoral vein. The right vagus was exposed and stimulated by induction shock in certain experiments. Blood was obtained by sterile technique, from the median basilic vein of the patients, collected in sterile flasks, and the serum allowed to separate in the cold. The manifest difficulty that must always be encountered in such work, i.e., the impracticability of obtaining a large supply of blood from each case, has somewhat hindered certain experiments, but the authors believe that their results are sufficiently interesting to justify reporting.

The authors used, for these experiments, the sera from 28 patients having exophthalmic goiter. Other sera examined included those from normal individuals, from patients having goiters without apparent intoxication, and from patients presenting the picture of a long-standing intoxication, presumably due to adenomata of the thyroid. Only the sera from patients with active symptoms of exophthalmic goiter and with markedly hyperplastic glands, as shown by microscopical examination, produced in the dogs injected any definite symptoms of cardiovascular depression.

The curves produced by the sera from patients affected with exophthalmic goiter have naturally fallen into 3 groups:

1. Those sera causing more than 30 mm. of Hg. drop in blood-pressure.
2. Those sera causing a drop in blood-pressure, but less than 30 mm. of Hg.
3. Those sera causing no appreciable drop in blood-pressure.

The significance of the following classification was observed after an analysis of the individual cases.

1. *Six sera causing drops in blood-pressure of more than 30 mm. of Hg.* The four curves in Chart 1, all of which produced drops in blood-pressure of more than 30 mm. of Hg. when injected in doses of 2.5 ccm. per kilo dog weight, were obtained by injecting sera from patients who were at or near the height of an early and severe intoxication — hyperthyroidism.

2. *Ten sera causing drops in blood pressure of less than 30 mm. of Hg.* Chart 3 shows the curves resulting from injections of six of these sera which caused a fall in blood-pressure of less than 30 mm. of Hg., but which apparently contained a slight amount of the depressor agent. Eight of these ten patients had been afflicted with the disease for more than a year, and none of them seemed near any

marked exacerbation. In general, it may be stated that these cases were of longer standing and with more pronounced intoxication than those in the following group.

3. *Thirteen sera causing no appreciable drop in blood-pressure.* None of the patients seemed to be near a crisis, and eight of them had been sick less than nine months.

These experiments seem to indicate that patients affected with exophthalmic goiter, who are suffering from a marked degree of intoxication at or near the height of the clinical curve of the disease, possess serum which has a powerful depressor action. The authors have failed to demonstrate this depressor action by similar means in normal sera or in sera from patients not having markedly hyperplastic thyroids. Also, sera from patients with exophthalmic goiter not at or near the crest of the wave of intoxication are less potent or may be entirely inactive.

Since it was not always thought best to bleed very sick patients, only a small number of experiments have been made with sera from patients with severe intoxications. Yet it may be of interest to know that most of the patients that were bled experienced considerable relief from their subjective symptoms after the bleeding. The results of intravenous injections, into dogs, of saline extract of 90 goiters of various kinds from human patients, have also been reported.

Experiments with extracts of 48 exophthalmic thyroids have shown that the markedly hyperplastic goiters considered typical of Graves's disease have a more powerful depressor action than that of the extract of any normal organ examined, including muscle, liver, spleen, pancreas, breast, testicle, thyroid, etc. The fall in blood-pressure averages 60 mm. of Hg., and is often considerably more, whereas, that from other tissues in any comparable dosage is usually less than 25 mm.

Extracts of adenomata of the thyroid, of simple colloid goiters, and of normal thyroids likewise have a depressor action, which, however, has not been found so marked as that produced by extracts of exophthalmic thyroids. Injections equivalent to as much as 5 gm. per kilo dog weight do not cause a fall as great as that of the extracts of exophthalmic goiters in doses of 0.5 gm. per kilo dog weight.

The first injection of any extract of fresh goiter, as of most extracts of tissue, confers a marked degree of tolerance to subsequent injections of the same material during the same experiment.

As is well known, peptone solutions cause a marked fall in blood-pressure on intravenous injection, and subsequent injections show that a tolerance has been established similar to that produced by extracts from goiters. The depressor action of peptone solution is not, however, affected by a previous dose of the extract of exophthalmic goiter, nor is the action of the extract of exophthalmic goiter affected by a previous dose of peptone solution. On the other hand, it is interesting to note

that the depressor action of the extract of an exophthalmic goiter is much diminished by a previous dose of potent serum from a case of toxic exophthalmic goiter, and the reverse, judging from a limited number of experiments, is equally true. In other words, a crossed tolerance seems to exist between the depressor action of extract of exophthalmic goiter and of exophthalmic serum. It seems probable, therefore, that the depressor agent in the extract of exophthalmic thyroid and that in the serum from a case of exophthalmic goiter are of the same nature.

No attempt has yet been made to identify the chemical nature of the depressor substances in these extracts of thyroids or of those in sera of patients affected with exophthalmic goiter. From certain experimental evidence it seems that the substance is neither cholin nor ordinary peptone.

The authors believe that the work submitted justifies the following conclusions:

1. Fresh extracts made from exophthalmic thyroids contain a powerful depressor substance.

2. A powerful depressor substance likewise exists in the sera obtained from certain cases of exophthalmic goiter.

3. The latter substance is present in direct proportion to the clinical acuteness and severity of the disease.

4. The sera from patients with non-hyperplastic thyroids do not have a depressor action.

After an active depressor dose of the serum from a case of exophthalmic goiter, the depressor action of the extract of an exophthalmic goiter is weakened or abolished; the converse is also true.

GEORGE G. BEILBY.

Tanberg, A.: Experimental Study of the Physiology of the Parathyroid Glands, Especially Their Relation to the Thyroid (Experimentelle Untersuchungen über die Physiologie der Glandula parathyroidea unter besonderer Berücksichtigung ihres Verhältnisses zur Glandula thyroidea). *Ark. f. math. Naturvidensk.*, 1913, xxxiii, Nos. 1-2.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Parathyroidectomy in cats causes symptoms of acute tetany, if a sufficiently large number of glands are removed. Under some circumstances the removal of three parathyroids causes a chronic tetany, which develops after a latent period of three to four months free from symptoms. The symptoms are stiffness of the muscles, twitching, tremor, increased reflexes, emaciation, albuminuria, and often, diarrhoea. This condition remains for some time unchanged without any marked alteration in the general health of the animal, but a uniform and continuous increase in the severity of the symptoms may be noted. After three to six months the animal dies with tetanic convulsions.

The diet is undoubtedly of great influence, for an exclusive meat diet hastens the development of the disease while a milk diet has a curative effect, and improvement takes place after the feeding of parathyroid substance. A total thyroidectomy is fol-

lowed by chronic symptoms, such as apathy, indolence, and a fall in temperature of from 1 to 1½° C. Cats deprived of the thyroid may live several months without showing signs of tetany, even when they are fed exclusively on meat. Small remnants of thyroid left behind may develop through hypertrophy into very compact tissue, which offers some points of resemblance to parathyroids. The parathyroids themselves do not change in structure, even when cachexia lasts for several years.

Exclusive meat diet causes a marked hypertrophy

of the thyroid. This does not take place when there is at the same time insufficiency of the parathyroids, even though the latter may cause no visible clinical symptoms. If marked hypertrophy already exists as a result of exclusive meat diet, it disappears after the extirpation of a sufficiently great number of parathyroids. In chronic tetany the thyroid seems to atrophy in spite of meat diet. The experiments seem to show that the two glandular systems, though different in function, have a mutual effect upon one another, directly or indirectly. NILSSEN.

SURGERY OF THE CHEST

CHEST WALL AND BREAST

Baldwin, J. F.: Sarcoma of the Chest Wall. *Ann. Surg., Phila.*, 1913, lviii, 853.

By Surg., Gynec. & Obst.

Basch uses 5-grain doses of carmin mixed with a teaspoonful of water as a simple, harmless, reliable, and convenient means for the demarcation of stools, the estimation of gastro-intestinal motility and patency, for the detection of fistulous communications of the alimentary canal with the exterior or with other hollow organs, for the location of the distal end of a duodenal tube, and to aid in the differentiation between œsophageal diverticulum and dilatation. With the more universal employment of this method, no doubt further fields will suggest themselves.

LEO DWAN.

Hahn, B.: Treatment of Acute Pleural Empyema (Zur Behandlung des akuten Pleuraempyems). *Deutsche med. Wchnschr.*, 1913, xxx x, 1830.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author discusses in this work the question of whether the most rational treatment of pleural empyema is radical resection of the ribs or conservative puncture and aspiration of the pus, as described by Bülow. Because of his favorable results in 25 cases the author gives the preference to the latter. Rib resection, in his opinion, has several disadvantages, such as greater operative danger, especially from too quick decrease in pressure, and post-operative pneumothorax, to avoid which a complicated apparatus is necessary.

Bülow's drainage offers several advantages, including less operative danger and avoidance of post-operative pneumothorax. The emptying out of the pus and the re-expansion of the lung can be furthered in this operation by the use of a suitable suction apparatus.

In the 25 cases treated by the author, he followed Schreiber's proposal to connect the Nélaton catheter with a Potain's apparatus. The results were favorable. In 20 of the 25 cases, 80 per cent, the recovery was complete; 3 patients, 12 per cent, were not cured, and 2 patients, 8 per cent, died.

The shortest duration of treatment was three

days, in a case following pneumonia in a 3-year-old child. The longest time was 55 days; the average 25 days. In this connection it should be noted that the treatment was considered closed with the removal of the drain, and that two cases were excluded in reckoning the statistics as to the duration of treatment — one a case in which there was an intercurrent scarlet fever, and in which recovery took 124 days; and one, a case that left the hospital without recovery after 50 days, and in which the fistula was reported closed four weeks later.

Among the 25 cases there were 9 children aged from 2 to 7 years. The empyema in the majority of the cases followed pneumonia.

In conclusion, the author gives a short tabulated résumé of his cases, together with some statistics in regard to operative cases of empyema, from which it seems that the results in the latter are more unfavorable as to recovery, mortality, and average duration of treatment.

TIEGEL.

TRACHEA AND LUNGS

Gros, E., and Rehfuß, M. E.: Radiography in Pulmonary Gangrene. *Med. Rec.*, 1913, lxxxiv, 1080.

By Surg., Gynec. & Obst.

Gros and Rehfuß report a case in which they had autopsy proof. The fluoroscope revealed a central transparent shadow about the size of a silver half-dollar surrounded by an irregular opacity. Clinically, when the patient coughed, a distinct and markedly blowing sound, almost like amphoric breathing but more acute and whistling in character, could be heard just outside and above the apex beat. This sound, which was heard only during cough, was distinctly gurgling, and confined to one spot. Examination of the sputum revealed bloody mucopurulent sputum, no tubercle bacilli, many gram-positive diplococci and streptococci. The autopsy revealed a large infiltrating gangrenous cavity which was found to communicate with the bronchus. There were two other irregular cavities which had passed unseen in the midst of the hepatized lung. Radiographs showed not only the cavity and infiltrated tissue seen on the screen, but also traced

an exact shadow of the cavities or multiple gangrenous foci seen at autopsy.

The authors believe that this case demonstrates the value of radioscopy in accurately locating and

showing the early infiltration and cavity formation and the value of the radiograph in demonstrating the multiple foci of pulmonary gangrene which could not be perceived by radioscopical examination.

EDW. H. SKINNER.

SURGERY OF THE ABDOMEN

ABDOMINAL WALL AND PERITONEUM

Pannett, D. A.: *The Selection of the Incision in Coliotomy.* *Proc. Roy. Soc. Med.*, 1913, vii, Surg. Sect., 1.
By Surg., Gynec. & Obst.

The prevention of bad after-effects of opening the abdominal cavity can only be accomplished if the following precautions are taken: (1) No nerves must be permanently damaged; and (2) wounds in the muscle and aponeurosis must unite by firm narrow scars, which are so situated that they are not subjected to undue cross-tension which will result in their stretching. That these requirements are not filled by the ordinary incision is shown by the author following an examination of a number of cases.

Incision in the linea alba is very commonly followed by stretching of the scar and separation of the two recti, when the wound has been made below the umbilicus. An incision splitting the rectus fibers is often followed by paralysis of the part of the rectus which lies medial to the incision. Incision in the linea semilunaris is often followed by extensive paralysis of the rectus. Lateral rectus sheath incision, where the rectus is pulled mesially, is also complicated, according to the author, by many subsequent paralyses of the rectus. McBurney's incision, oblique lumbar incision, and vertical incision lateral to the linea semilunaris, all are complicated by more or less paralysis of the muscles supplied by the nerves severed by the incision.

The explanation of the foregoing observations is said to lie in the anatomical relation of the nerve supply to the different muscles affected, and also in the fact that poor healing takes place where the blood supply is inferior, as, for example, in the linea semilunaris. The nerves supplying the rectus come from the sixth to the twelfth dorsal and these nerves run obliquely through the outer part of the rectus sheath into the rectus muscle.

The incisions which the author recommends are the following: (1) Wherever possible, a paramedian incision should be employed, made through the anterior sheath of the rectus near the median line, the rectus with its nerves being pulled outward, and the incision completed through the posterior sheath of the rectus. (2) Kocher's incision for reaching the gall-bladder is recommended. This incision is placed in two ways: One way is to make an incision parallel to the costal margin, retracting the nerves out of the way; the second method is to make a long medial incision with a transverse incision extending outward from the lower end of the medial one.

J. H. SKILES.

Reichelderfer, L. H.: *Postural Treatment of Post-Operative Abdominal Adhesions.* *Surg., Gynec. & Obst.*, 1913, xvi, 755.

By Surg., Gynec. & Obst.

The author proposes a method of treating recurrent post-operative abdominal adhesions which, so far as he knows, is original. It is based upon his belief that, in certain cases, these adhesions will re-form even after repeated careful operations with or without the use of salt solution, sterile oil, cargile membrane, or other methods of treatment. Most of the disabling pain which these cases suffer while standing is due to constant pulling on the sensitive parietal peritoneum; the author, assuming the impossibility of always obtaining an anatomical cure, endeavors to secure relief by having the adhesions re-form in such a position as to obviate the peritoneal traction with its resulting discomfort.

To this end he advises breaking up all adhesions as thoroughly as possible, paying especial attention to the parietal peritoneum; the abdomen is filled with salt solution, closed carefully with both tier and stay sutures, and a snug binder applied. Within a few hours after reaction, the patient is placed in a sitting position and kept there constantly, being allowed to sit up in a chair in a couple of days and encouraged to walk about as much as possible, so that the abdominal contents will adjust themselves at the lowest possible level while adhesions are re-forming, thus minimizing subsequent peritoneal tension while the body is erect. The salt solution will tend to keep the raw surfaces apart until the patient can be placed in the upright position.

The author cites the case of a woman who, for three years, was in hospitals for periods aggregating 250 days, and underwent six operations for abdominal pain due to adhesions, and who was completely relieved by the method described.

Clogg, H. S.: *Inguinal Hernia in the Child.* *Clin. J.*, 1913, xlii, 465.

By Surg., Gynec. & Obst.

Inguinal hernia in the child, the author believes, is always dependent upon a development error, the sac of the hernia being the processus vaginalis, in whole or part. The hernia descends the whole length of the canal, and is, therefore, of the oblique or indirect variety. The failure of this processus vaginalis to undergo normal development accounts for all inguinal hernias in childhood. He believes that weakness of the abdominal muscles, and some increased intra-abdominal pressure have very little to do with inguinal hernia in children.

In the male, two types of hernia are recognized: (1) The sac is the complete processus vaginalis—the complete sac—and extends to the bottom of the scrotum, having the testicle project into it posteriorly. (2) The lower part of the processus vaginalis has become separated—the upper part only remaining in communication with the peritoneum—the incomplete sac. The size of the incomplete sac will vary considerably, depending on the site at which it has been naturally obliterated.

The diagnosis is considered from two standpoints: (1) The history of a swelling which has been seen and has disappeared, and cannot be seen when the child is brought for examination; and (2) a swelling which is present. In regard to the former, glands appearing suddenly, hydroceles, excessive pubic fat, and a movable testicle must be differentiated. In regard to the latter it is easy to determine that the swelling comes from the abdomen by being unable to detect the cord free from the swelling.

The author considers the treatment under two headings: Truss and operative. The only value in the truss is in restraining the descent of the hernia, thus allowing nature to proceed with normal development. A truss may act indirectly in the cure of a hernia. During the first few months the author advises a truss solely with the object of restraining the hernia. This treatment he continues to about the fourth or sixth month; if a child is under observation after the fourth or sixth month of life, and is healthy, operation is advised. In special circumstances, e. g., a large hernia which cannot be controlled by a truss, or a hernia which is frequently coming down and causing difficulty in reduction, operation will have to be undertaken at an earlier age.

The cæcum is frequently herniated in children, and must be treated carefully. Appendicitis in the hernial sac occurs in children—about 25 per cent of the cases reported being found in children. Rarely the pelvic colon escapes through the ring on the left side, although the bladder also may occupy the hernial sac. The treatment consists in carefully separating the portion of the bladder, and allowing it to return into the abdomen. The ovary and tube are frequent contents of the hernial sac in the child. The treatment consists in carefully separating the organs and replacing them. Torsion of the pedicle may be a complication, and in some cases removal of the ovary is necessary. Strangulation requires immediate operation, and the complications arising should be carefully treated.

WALTER F. WINHOLT.

Ochsner, A. J.: The Treatment of Hernia in Children. *Illinois M. J.*, 1913, xxiv, 323.

By Surg., Gynec. & Obst.

The conclusions reached in this paper were developed as a result of observations first made upon children who had strangulated hernia, which had been reduced without operation, permanent spontaneous cures resulting by simply keeping the children

in bed with the foot of the bed elevated for a short time, at the same time overcoming the abnormal abdominal pressure by careful dieting and medication. Children having hernia who were circumcised for phimosis were observed to undergo spontaneous cure of their hernia, also, while resting under medical care.

A study of statistics in the literature shows that hernia in children are much less frequently found between the ages of six and thirteen, and that if no new hernia were formed between the ages of six and thirteen, 73 per cent of all hernia in children at six years of age would have healed spontaneously by the age of thirteen.

The causes of hernia in children are: (1) Non-closure of the inguinal canal; (2) congenital separation or weakness of structures, surrounding the inguinal, femoral, or umbilical opening—frequently hereditary; (3) abnormal length of mesentery and omentum; (4) abnormal intra-abdominal pressure due to (a) faulty nutrition; (b) to constipation; (c) to phimosis; (d) to coughing; (e) to vomiting; (f) to crying and straining; (g) to traumatism; and (h) to overexertion.

About 5 per cent of cases should be operated upon; the indications are (a) strangulated hernia; (b) irreducible hernia due to adhesions; (c) an unusually large opening in a free hernia, especially if the condition is hereditary; (d) reducible hydrocele; (e) undescended testicles, unless there is a tendency toward spontaneous cure. The remaining 95 per cent will heal if the exciting cause has been removed.

The recumbent position with the foot of the bed elevated is a great aid in the after-treatment of operative cases as well as in the management of them without operation.

The truss treatment is a valuable aid, and is to be used in conjunction with attempts to relieve the abnormal intra-abdominal pressure by dieting, relief of constipation, phimosis, etc. When the child cannot be kept in bed, a well-fitting truss should be worn night and day for at least six months, or until there is no protrusion of hernia.

FLOYD B. RILEY.

GASTRO-INTESTINAL TRACT

Rosenow, E. C.: The Production of Ulcer of the Stomach by Injection of Streptococci. *J. Am. M. Ass.*, 1913, lxi, 1947. By Surg., Gynec. & Obst.

Hæmorrhages, superficial erosions, and definite ulceration of the mucous membrane of the stomach and duodenum occur, not infrequently, during severe infections in man and in experimentally infected or otherwise severely intoxicated animals. In some of these instances there can be no question but that infection plays a rôle in the etiology of ulcer.

The author has produced ulcer of the stomach or duodenum, or both, by intravenous injection of certain streptococci in eighteen rabbits, six dogs, and one monkey. He found that streptococci of marked virulence or streptococci of very low viru-

lence both failed to produce ulceration, while a streptococcus of moderate activity seemed to produce ulceration most frequently. He believes that the ulceration is due to a localized infection and secondary digestion. The ulcers are usually single and deep with marked tendency to hæmorrhage and perforation, and resemble the human gastric ulcer in many respects.

The streptococci which produced the lesions were originally obtained from human tonsils. From the similarity of the lesions produced to those which occur in man, from the fact that ulceration takes place in the absence of a generalized infection, and from the origin of the streptococcus in question, it seems reasonable to suppose that ulcer of the stomach and duodenum arises from an infectious process.

J. H. SKILES.

Carman, R. D.: *The Röntgen Ray as an Aid in the Diagnosis of Gastric Cancer and Ulcer.* *J. Indiana St. M. Ass.*, 1913, vi, 485.

By Surg., Gynec. & Obst.

The author quotes from a recent paper by W. J. Mayo, in which it was stated that the signs and symptoms of gastric cancer could be arranged in the following order with respect to value: (1) The presence of a palpable tumor, in 67 per cent; (2) food remnants, in 53.3 per cent; and (3) the röntgen ray signs.

Carman states that the work of the last few months at the Mayo Clinic has necessitated a change in the order of importance of these signs, the X-ray now taking first place, with diagnostic signs of cancer in 93 per cent of the cases.

In gastric ulcer the radiological diagnosis is somewhat less certain, but even here, approximately 65 per cent show diagnostic signs, and this percentage will probably be materially increased in the future.

The technique employed is the double-meal method of Haudek, both fluoroscopy and radiography being used.

The radiological signs of carcinoma of the stomach he arranges in the order of their relative value as follows:

1. Filling defects.
2. Altered pyloric function.
 - (a) Gaping of the pylorus.
 - (b) Obstruction of the pylorus.
3. Advanced position of the six-hour meal.
4. Absence of peristalsis from involved areas of the wall of the stomach.
5. Diminished mobility; loss of flexibility.
6. Diminution in size of the stomach.
7. Antiperistalsis.

The filling defect is a sign of cardinal import and practically indispensable in the röntgen ray diagnosis of carcinoma. It is occasioned by the projection of the tumor mass into the lumen of the stomach. True filling defects must be carefully differentiated from indentations of the wall of the stomach by a gas-filled colon, by adjacent extrinsic tumors, and by spasm. Palpation during the

screen examination assists materially in determining the actuality and permanence of filling defects. Alteration of pyloric function is an almost invariable accompaniment of gastric cancer, either free and continuous patency or obstruction. Loss of flexibility of the stomach by infiltration of its walls is important. Antiperistalsis is sometimes seen in association with pyloric obstruction.

The radiological signs of gastric ulcer may be classified in two groups: (1) Those which are cardinal and more or less pathognomical; (2) those which are merely suggestive.

The cardinal signs are as follows:

1. Visualization of the bismuth-filled crater of a callous ulcer — the nischen symptom.

2. The diverticulum of perforating ulcer.

3. The incisura.

Signs which are not determinative but merely suggestive of ulcer include:

1. Acute fishhook form of the stomach with displacement to the left and down.

2. Delayed opening of the pylorus.

3. Localized pressure-tender point on the lesser curvature.

4. Residue in the stomach after six hours.

5. Lessened mobility.

6. Settling of the bismuth to the lower pole of the stomach, such as is seen in hypotonicity or atony.

A bud-like projection from the contour of the bismuth-filled stomach, corresponding to the crater of a callous ulcer, is a definite and valuable sign, not imitated, at least closely, by any other condition. The diverticulum of perforating ulcer is quite as characteristic. The perforation may be anterior into the liver or posterior into the pancreas, and a continuation of the ulcerative process results in an excavation which, when filled with bismuth, often shows a walnut-sized more or less spherical outline with a layer of bismuth, surmounted by a layer of fluid and capped by an air bubble. The incisura is an indentation of the greater curvature, usually in the vertical portion of the stomach, of varying width and depth. An incisura must be differentiated from a peristaltic wave and from transient reflex spasms.

In conclusion, Carman states that the röntgen-ray simply furnishes valuable contributory evidence as to the presence and nature of gastric lesions — so valuable that whenever available it should be employed in the general routine—but the final judgment should take into account all the evidence of every sort. Hence the radiologist should be not only a radiographer but a clinician to the utmost of his ability, able to follow his cases to the operating table, and take his rightful share of responsibility.

ALBERT MILLER.

Stockton, C. G.: *Pyloric Spasm.* *Canad. M. Ass. J.*, 1913, iii, 1043.

By Surg., Gynec. & Obst.

The cause of pyloric spasm is an over-spasticity of the sphincter muscle, either inherent in the muscle itself or communicated to it through its nerve

supply. A high degree of hydrochloric acid may so prolong the duodenal reflex which closes the pylorus as to produce a resultant spasm. It is evident that when duodenal ulcer or cancer or duodenitis is present the pyloric spasm will be much more marked owing to the increased irritability of the affected parts to the hydrochloric acid. But there are other causes of pyloric spasm. The author has seen it occur in cases of stone in the bladder, uterine retrodisplacement, and in nephritis. It may occur in eye-strain, psychasthenia, and in nervous shock.

The symptoms vary greatly in intensity, gaseous or acid eructations being the most common symptoms. Often there is a burning pain or feeling of distress in the epigastrium. The "hunger-pain" so frequently associated with ulcer is attributed by the author to a spasm of the pylorus. There may be a definite mass palpable.

The treatment of pyloric spasm should be directed at the causative factors. This may mean some operative interference, e.g., an appendix or gall-bladder operation. The relief of the pyloric spasm can often be accomplished through the administration of alkalies, with possibly the addition of a sedative.

J. H. SKILES.

Einhorn, M.: Further Experiences with Stretching the Pylorus. *Am. J. M. Sc.*, 1913, cxlvi, 857.
By Surg., Gynec. & Obst.

The author briefly reviews the old cases showing that the pylorus can be stretched by way of the mouth and reports twenty-one new cases. Among them, 8 had a real stenosis and 13 had pylorospasm of varying severity; no mishap occurred, and the results as a whole were very good. The pains subsided and the isochymia or hypersecretion, if present, decreased or disappeared.

The differentiation between benign stenosis and pylorospasm is best made by measuring the pylorus; in pylorospasm No. 50 to 60 F. can be passed through the pylorus while in real stenosis No. 40 is about the largest that can be passed. Indications for stretching the pylorus are: (1) All cases of spasm, provided there is no fresh ulcer in the immediate vicinity. (2) Benign stenosis may be stretched also with the same exceptions as given above. (3) Advanced benign structures which cannot be operated either on account of some great underlying danger or when the patient refuses operation. The author's method of stretching is not antagonistic to surgery but works hand in hand with it.

H. A. POTTS.

Zweifel: Intestinal Fistulæ and Their Treatment (Über Darmfisteln und ihre Behandlung). *Zentralbl. f. Gynäk.*, 1913, xxxvii, 1403.
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

After opening an abscess following appendicitis, an intestinal fistula appeared, and as it did not close spontaneously, it was operated on in two stages, as follows:

1. Median laparotomy and lateral entero-anastomosis was done between the last coil of the ileum and the transverse colon. The part of the intestine thus excluded, with the vermiform appendix and the ascending colon, was closed and as far as possible invaginated.

2. After the patient had recovered, an incision was made around the fistula; the excluded part of the intestine was separated, step by step, from the mesocolon and extirpated *in toto*. The patient recovered but foul-smelling pus was still discharged.

RUHEMANN.

Turck, R. C.: Intestinal Resection; Successful Removal of More Than Twelve Feet of Bowel; with Observations on the Subsequent Metabolism. *Tr. South. Surg. & Gynec. Ass.*, Atlanta, 1913, Dec.
By Surg., Gynec. & Obst.

Turck reports the successful removal of ten feet and ten and three-quarters inches of ileum, together with the cæcum, ascending colon, and part of the transverse colon, because of dense adhesions, numerous partial obstructions, fecal fistula, and multiple sinuses. The work, which was done in three stages, was followed by serious metabolic disturbances and diarrhoea.

Studies of the metabolic processes, eight months after the ileum resection, showed that a probable compensatory hyperplasia of intestine with consequent compensatory production of enterokinase had taken place, enough, with a regulated diet, to thoroughly digest and assimilate carbohydrates and a moderate amount of fats, but not enough to fully care for proteids.

A measured diet, adjusted according to caloric values, and thorough metabolic examination of feces, controlled the diarrhoea and caused a decided gain in strength and weight — medication had no effect upon the diarrhoea.

Turck believes that, since the small intestine varies from 15 to 25 feet in length, no absolute rule can be laid down as to the amount of gut that may be removed with safety, and that reports of extensive resections are of no especial scientific value unless there can be shown in that particular individual the total length of intestine.

Short-circuiting, when possible, is preferable to resection, particularly if the absorption area in the ileum be involved, and in cases of necessary extensive resection it is suggested that Fantino's plan of creating a vicious circle in the remaining segment of gut be tried.

Case, J. T.: X-Ray in the Diagnosis of Carcinoma of the Colon. *Interst. M. J.*, 1913, xx, 1103.
By Surg., Gynec. & Obst.

The author emphasizes the necessity for early diagnosis in carcinoma of the colon, and as this condition is comparatively rare it is consequently seen but seldom in routine examination of the colon, and the greatest care should be exercised in all examinations

of the gastro-intestinal tract that as few diagnostical errors of omission as possible shall be made.

The röntgen findings in carcinoma of the bowel are as follows:

1. Delay in the progress of a bismuth meal, given by mouth, varying from 48 hours to several days.

2. Arrest in the progress of bismuth clysmas; the obstruction may be complete or may be overcome in a greater or less period, according to the degree of the stenosis. Haenisch's technique for bismuth enteroclysis should be followed literally. It must be shown that incomplete filling on the far side of the obstruction is not due to insufficient pressure of the bismuth column or the presence of dried faecal masses.

3. Dilatation of the colon on the proximal side of the lesion, which is evidence of serious obstruction when present. The colon may end at obstruction in a funnel-shaped process, or there may be irregular filling defects, characteristic of cauliflower carcinoma.

4. There may be a palpable tumor coinciding with the filling defect, but its absence is unimportant, especially in very early cases. Faecal accumulations are apt to be present on the proximal side of the obstruction and must not be confused with real tumors.

5. The author believes exaggerated antiperistalsis to be a valuable sign in the diagnosis of serious obstruction. However, normal antiperistalsis, which is the prevailing movement in the caecum, ascending and right half of the transverse colon, must not be mistaken for exaggerated antiperistalsis. Laxatives before examination increase antiperistalsis, and the character of obstruction, malignant or benign, organic or spastic, cannot be determined by this phenomenon.

In the author's technique, ordinary bismuth or barium meals are used. If the latter is used, the barium sulphate must be known to be chemically pure; meal by mouth and enteroclysis should both be used; careful cleansing enemata should be given before examination. A röntgenoscopic table of the Haenisch type is essential for colon work. The author calls attention to the necessity of adequate protection around the tube, to adjustable lead diaphragms, and to the proper preparation of the eyes before a fluoroscopic examination. The patient is placed supine; an ordinary rectal tube is introduced past the spincter; the container is elevated 2 ft. and the clysmas allowed to flow. The caecum should fill in 3 or 4 minutes if no obstruction is present. The progress of the clysmas is watched as it ascends the colon, and if any abnormalities are found, the examination should be repeated at a later date and findings verified. W. W. GRIER.

Norbury, L. E. C.: Imperforate Conditions of the Rectum and Anal Canal; and their Treatment.
Practitioner, Lond., 1913, xci, 834.

By Surg., Gynec. & Obst.

The normal development of the rectum and anus is considered in text and diagram relative to those

embryological defects which give rise to imperforate conditions. The surgical relief of these conditions is discussed.

The rectum is originally derived from the hind-gut and opens into a common sinus with the urogenital tract. From this tract it soon becomes separated by two lateral partitions which coalesce to form the upper portion of the perineal body. If this septum be completely absent or misplaced, the rectum opens into the bladder, or if deficient the rectum opens into the deep urethra, or by sinus into the perineum, or, in the female, into the vagina. This segment, known as the postallantoic segment, prolongs downward and meets the anal canal which is infolding from the proctodeum. Failure in development of the postallantoic segment is the most common of all imperforate defects.

Non-absorption of the partition or cloacal membrane between this segment and the anal canal results in a less serious defect, namely, imperforated anus. Defects in the formation of the anal canal are rare. When the postallantoic segment fails to develop, the rectum usually ends in a blind pouch at about the level of the prostate or cervix uteri. This pouch is usually invested with peritoneum except over the posterior surface.

Treatment must be promptly instituted. For mere stenosis, the tract is dilated daily by bougie or finger during the first year of life. When only a septum separates the anal from the rectal canal this is to be crucially incised. First, however, the surgeon must be convinced by the bulging into the anal canal of a thin convex bluish septum that the defect is failure of absorption in the cloacal septum and not one of absence of the postallantoic segment of rectum. If the anal canal ends in a pucker it is more probable that the postallantoic portion is deficient and that attempt to puncture or incise the blind end of the rectum will open into the peritoneal cavity. When in doubt, or with definite absence of the postallantoic segment, the posterior wall of the anal canal is incised to the tip of the coccyx and the rectum is sought in the hollow of the sacrum. The posterior surface is identified and the rectum stripped free of the peritoneum which sometimes invests the entire pouched end. The blind end is then sewn to the anal opening, incised, and held open by tube, and, later, by daily dilatation.

When the rectum cannot be found, low medium colostomy is done as an emergency measure and the establishment of the normal path is postponed until the second half year of life. When fistula into the urethra or the vagina or onto the perineum exists, these tracts may close spontaneously after the normal passage for faeces has been established. Fistula into the bladder must be treated by a permanent colostomy dividing the bowel and invaginating the lower end; however, this is an operation of doubtful utility.

With the exception of that defect where the rectum opens within the vulva of the female, the prognosis is bad. Recurrent stenosis is common, the economy

of the fœtus is unfavorably affected before birth, the operative procedure is severe, and late hypertrophy and dilatation of the bowel commonly follows.

KARL CONNELL.

Martin, C. F.: The Anorectal Line; Its Clinical Significance. *Proctologist*, 1913, vii, 216.

By Surg., Gynec. & Obst.

Martin brings out the importance of the anatomical division of the lower bowel, by the anorectal line, into an upper portion which is developed from the embryological entoderm, and a lower portion which is ectodermic in origin. Along with these embryological distinctions are associated differences in blood and nerve supply, with consequent influence on the pathological conditions of the two parts. Thus, above the anorectal line the superior hæmorrhoidal veins begin, and these empty into the inferior mesenteric vein, which carries the blood to the portal circulation. Below this line, the blood is carried via the middle and inferior hæmorrhoidal to the inferior vena cava. Again, above the anorectal line the rectum is supplied by visceral or sympathetic nerve fibers, while below it the parts are supplied by spinal nerves. The lymphatics from the bowel above the line drain upward into the pelvis, while those below the line pass to the inguinal glands.

From a clinical standpoint these anatomical differences have an important bearing upon the symptoms and course of disease. Infection and malignant disease occurring above the anorectal line tend to spread upward by way of the deep lymphatics to the pelvic or urogenital organs, or to the liver, via the portal circulation. Owing to the sympathetic nerve supply, lesions of this part are not so apt to be painful, but are rather associated with a sense of discomfort. Lesions below the anorectal line are usually accompanied by pain, while metastasis from infections and malignant disease usually affects the inguinal glands.

ROBERT H. IVY.

LIVER, PANCREAS, AND SPLEEN

Stockton, C. G.: Condition of the Upper Region of the Abdomen in Relation to Disease of the Gall-Bladder. *Boston M. & S. J.*, 1913, clxix, 862.

By Surg., Gynec. & Obst.

The author states that there are four main causes for obscurity in diagnosis of conditions of the upper region of the abdomen. First, the development and persistence of symptoms referable to an organ as the result of disease in another, usually, but not necessarily, contiguous part. This phenomenon may be due to obstruction at the site of disease which interferes with the function of some related part; or it may be due to a nervous action which refers the trouble to some part other than the diseased; or, finally, it may be due to secondary infections or metastases giving rise to local symptoms of such importance that the primary disease is overlooked. Many instances could be cited where

symptoms referable to one part really arise from disease in another; viz., duodenal ulcer may involve the bile papilla and thus occasion jaundice; pyloric spasm and its accompanying symptoms may be due to infection of the gall-bladder; malignant endocarditis in its symptomatology may closely parallel that of an infected gall-bladder. Often there is the absence of the more distinctive features of endocarditis; the liver is enlarged and there is tenderness and muscle spasm over the gall-bladder with fever and leucocytosis. These symptoms may lead to an unnecessary drainage of the gall-bladder.

The second main cause of mistaken diagnoses is the presence of comparatively trivial local disease accompanied by severe and misleading symptoms. In connection with the gall-bladder region there may be characteristic signs and symptoms of chronic or even acute cholecystitis, muscle spasm, tenderness, hepatic dullness, leucocytosis, besides severe pain, vomiting, sour stomach, and other expressions of pyloric spasm, collectively of sufficient importance to warrant operation and drainage; yet upon examining the exposed gall-bladder it will be found normal in appearance and to have normal contents. On the other hand, there may be marked local disease with a very trivial symptomatology.

The third main cause is the presence of two diseases: appendicitis and cholecystitis are often associated and duodenal or gastric ulcer may be associated with one or the other. Not a few cases are operated upon, a chronically inflamed appendix removed, and yet the symptoms persist, due to the presence of a pathological lesion elsewhere.

The fourth cause is the small degree of importance which is ordinarily attributed to the influence of diathesis and metabolism. The author believes that poor metabolism is responsible for more of the ills of mankind than is usually suspected. Many cases of gall-bladder disease improve under good diet, massage, and free elimination. Recently Loeper of Paris has demonstrated that oxaluria depends upon oxalæmia and that oxalæmia is demonstrable by blood examinations. He further states that oxalæmia alone produces symptoms which might well be ascribed to an infection of the appendix or gall-bladder, or to a peptic ulcer. J. H. SKILES.

Deaver, J. B.: Cholecystectomy. *Surg., Gynec. & Obst.*, 1913, xvii, 667. By Surg., Gynec. & Obst.

In certain well-defined conditions there is practical unanimity concerning the advisability of removing the gall-bladder. These conditions are:

1. Hydrops with obliteration of the cystic duct.
2. Chronic empyema.
3. Calcareous degeneration.
4. The cholesterol gall-bladder of Moynihan.
5. Gangrene.
6. Carcinoma limited to the gall-bladder.
7. Extensive laceration or perforation of the gall-bladder.

These conditions possess in common two undesirable features: (1) The impossibility of *restitutio*

ad integrum, and (2) the certainty or probability of the progress of the disease.

There are exceptions, however, even to the above rules. The author has, on more than one occasion, been content simply to drain a gangrenous gall-bladder and the patients have recovered without the necessity for a second operation.

The operation of cholecystostomy is the classical operation for gall-bladder cholelithiasis, but it has been almost discarded of late years owing to the appreciation of the need for drainage in clearing the gall-bladder and biliary passages of infection, of which calculi themselves are but a result. Granting the applicability of simple cholecystostomy in cases properly selected, it is nevertheless true from a practical standpoint that the surgeon will very seldom be able to select such cases, and, as a rule, some operation involving either drainage or removal of the gall-bladder must be employed if the greatest good to the greatest number is considered.

Pancreatic and peripancreatic inflammation when associated with gall-bladder disease should influence our treatment of the gall-bladder itself. Infection is carried from an inflamed gall-bladder to the peripancreatic tissues and it is believed in a percentage of cases the pancreas may be secondarily infected in this manner. For some time the author has been observing the peripancreatic lymph-nodes in the course of his upper abdominal explorations and has found them almost invariably enlarged in gall-bladder infections. When in his opinion such a condition is present and the gall-bladder presents such serious alterations as to make the question of cure by cholecystostomy problematical, he does not hesitate to perform cholecystectomy. He is not advocating cholecystectomy in all cases of peripancreatic or pancreatic inflammations; not all cases arise in this manner. When the pancreas appears markedly or chiefly affected he hesitates to remove the gall-bladder because of the possibility that it may be needed at a later period, owing to the progression of the pancreatic lesion and obstruction of the common duct thereby.

The author's experience with the operations of cholecystostomy and cholecystectomy inclines him to be rather more radical than hitherto; but he counsels the inexperienced surgeon to cling to cholecystostomy. As a rule, the stronger the indications for cholecystectomy the greater the operative difficulty.

Wade, H. N.: Primary Hodgkin's Disease of the Spleen, Dorothy Reed Type. *J. Med. Research*, 1913, xxix, 209. By Surg., Gynec. & Obst.

In contradistinction to the usual manner in which Hodgkin's disease presents itself—that is, by primarily involving the glands of the neck, or more rarely those of the mediastinum or retroperitoneum—the author here reports a rare form of the condition which is primary in the spleen. Previous to the case which the author here reports, he believes that only one true case of Hodgkin's disease of the

Reed type, which was primary in the spleen, has been reported in the literature. This case, reported by Symmers, occurred in a young unmarried female who had noticed an abdominal mass for some three years previous to the examination. The spleen was removed and found to have undergone the cellular changes characteristic of Hodgkin's disease.

The case Wade presents was that of a farmer, 55 years of age, who presented a mass in the region of the spleen which was felt fully three and one-half inches below the costal border. The blood examination showed hæmoglobin, 70 per cent; erythrocytes, 3,260,000; and white cells, 12,600. The spleen was removed and the patient lived for two years thereafter. A microscopical section of the spleen showed the condition to be typical Hodgkin's disease of the Dorothy Reed type. The author believes that while primary Hodgkin's disease of the spleen is undoubtedly a rarity, it occurs more frequently than a search of the literature would indicate. He believes that many of the cases reported as primary sarcoma of the spleen may have been examples of this condition.

From a study of this article the author's views may be summed up as follows:

Primary Hodgkin's disease of the spleen is a condition quite unique, but that it occurs no more frequently than has been held is doubtful, since some of the reported cases of primary splenic sarcoma may easily have been unrecognized cases of Hodgkin's disease.

In view of our ignorance of the etiology of the condition, and of the fact that the process occasionally arises in other deep-seated lymphadenoid tissues, the possibility of a splenic origin cannot be denied.

Since in the present case there was at no time any enlargement of the superficial lymph-glands, nor was there evidence of any lymphatic hyperplasia within the mediastinum or abdominal cavity, and since the disease was of long standing in the spleen as evidenced by the gross and histopathological appearance, it should be considered a case of primary Hodgkin's disease of the spleen.

GEORGE E. BEILBY.

MISCELLANEOUS

Müllerheim, R.: Diagnostic Difficulties in Abdominal Tumors (Diagnostische Schwierigkeiten bei Abdominaltumoren). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxiv, 278.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The diagnosis of abdominal tumors forms a difficult chapter in medicine, because, for a correct interpretation, the general condition of the patient, the functional examination of the organ involved, and the local symptoms of the tumor must be considered. But the local symptoms may be so masked by the hidden situation of the tumor in the abdomen and its involvement of neighboring organs that the most careful examination still leaves the case in

doubt; exploratory laparotomy must then be used as a last resort.

To illustrate these difficulties in differential diagnosis which occurred in his own practice, the author gives 7 rare cases as follows: (1) A cyst of the urachus; (2) a congenital abnormal location of the bladder at the umbilicus; (3) a sarcoma of the retroperitoneal lymph-glands; (4) a case of dystopia of the kidney; (5) a simultaneous intra-uterine and extra-uterine pregnancy; (6) a phantom pregnancy with tympanitic meteorism; and (7) a cæcum mobile.

WEBER.

Bassler, A.: Some Recent Conclusions on Abdominal Röntgen Ray Work. *J. Am. M. Ass.*, 1913, lxi, 2217.

By Surg., Gynec. & Obst.

Bassler finds that plugging the cardia to retain the bismuth in the œsophagus and then making stereoscopic plates with the patient in the standing position is the best means of diagnosing new growth of the œsophagus before marked stenosis exists. Another method is to give bismuth in 25 gm. quantities suspended in two ounces of syrup of acacia. He believes that the method of examination by food extraction of the stomach contents is more dependable in gaining an idea of exit from the stomach than is the bismuth X-ray method. He believes that a rectal injection of bismuth to outline the colon, given at the same time that observa-

tions are being made upon the emptying rate of the stomach, influenced the retention of bismuth in the stomach to a certain degree. He says that carcinoma of the stomach was best diagnosed by the X-ray method, for by it four cases were diagnosed early enough for complete excision and expectation of a cure; in none of these were the history, test meal, or other laboratory methods of so much value. In the late cases of carcinoma either or any combination of methods sufficed.

Adhesions of the colon were best diagnosed by the X-ray method, there being no laboratory findings to take its place. He is not ready to place much dependence upon the value of the X-ray in the estimation of gall-bladder adhesions, cholecystitis, cholelithiasis, duodenal ulceration, or chronic appendicitis. In only nine of the 167 cases in which Lane kinks were noticed could they be proved to be factors in causing delay at their site or above it in the stomach, where they had operative proof. Four cases of renal stone were encountered in which the renal calculus was not suspected from the history. In their cases of ureteral stone all of them showed the stoppage of the transit of the stone at the brim of the pelvis or much short of the bladder. In one case in which they interpreted a calculus in the pancreatic duct the operation proved the shadow to be a calcified gland outside of and near the head of the pancreas.

EDW. H. SKINNER.

SURGERY OF THE EXTREMITIES

DISEASES OF THE BONES, JOINTS, MUSCLES, TENDONS. CONDITIONS COMMONLY FOUND IN THE EXTREMITIES

Moore, J. E., and Corbett, J. F.: Studies on the Function of the Periosteum. *Tr. Western Surg. Ass.*, St. Louis, 1913, Dec. By Surg., Gynec. & Obst.

The authors have made a study of bone growth, both in man and, through experiments, in animals. The conclusions from these studies are: (1) Bones from which a portion of the shaft has been removed heal in the presence of irritation by a subperiosteal bridge of bone. (2) Cutting the nutrient artery prevents the formation of a subperiosteal bridge. (3) As the nutrient artery supplies medullary bone, and as the periosteum is left intact when the artery is cut, it may be assumed that the medullary bone is responsible for the subperiosteal bridge.

The subperiosteal bridge may fill in gaps left in the periosteum; therefore, the periosteum is not absolutely dependent upon that structure, even as a place of refuge. The subperiosteal bridge is more marked where it receives osteoblasts from two sources than from one. Fascia is a substitute for periosteum.

In heterotopic transplants, no subperiosteal bone could be produced by irritation. This is somewhat surprising, in that the heterotopic experiments were conducted upon rabbits. We know that old scars

in these animals frequently contain true bone, and that the periosteal device of Scheppelmann begot true bone in the peritoneal cavity.

At the present day, the periosteum is disregarded, and the modern surgeon may be comparatively indifferent to it when operating upon bone. If it is convenient, he preserves it, because the conservation of tissues is always good surgery; but if not, he does not hesitate to sacrifice it.

Hosmer, A. J.: Our Present Knowledge of Bone, with Reference to Infection and the Use of Bone as a Transplant. *Northwest Med.*, 1913, v, 329.

By Surg., Gynec. & Obst.

The author reviews the work of Macewen and states that the osteoblasts are contained in the hard cortical substance of the bone and that the periosteum acts simply as a lining membrane, the internal layer of which is loose and well supplied with circulation giving thereby a favorable ground for the proliferation of osteoblasts when they are thrown out from the cortical substance of the bone.

He also calls attention to the works of Cotton and Loder, in which they call attention to the fact that the endosteum probably plays a large part in the regeneration of bone.

The author passes hastily over the regeneration of bone, as shown in fractures, still holding to the

theory that the osteoblasts come from the cortical substance. He then satirizes the attitude of the physician who finds a patient with pain in the bone, and without making a thorough examination assumes that it is rheumatism and advises local applications and opiates, and allows the infection of bone to progress until there has been considerable destruction and the patient is toxæmic. He emphasizes the fact that many of our present cripples are due to the negligence of some doctor who did not recognize the heavy, bursting, boring pain which accompanies infection under pressure, as an osteomyelitis, and allowed the destruction of bone to go on until the patient was permanently crippled.

In his treatment the author calls attention to the necessity of immediate operation, giving free drainage to every infection of the bone, whether it is periosteitis or an osteomyelitis. He quotes Albee's saying that "many liberties may be taken with a bone graft without interfering with its success," and disagrees with him, stating that "absolute cleanliness and asepsis must be observed at all times in handling bone graft," and that "bone is the easiest tissue in the body to transplant, providing the bone is taken from the same body." He calls attention to the fact that "foreign bodies such as nails or screws loosen up when inserted into bone," and urges the use of live bone transplant or intramedullary splint as the best means of holding ununited fractures.

P. B. MAGNUSON.

Fründ, H.: Our Experience with Röntgen Treatment of Surgical Tuberculosis (Unsere Erfahrungen mit der Röntgenbehandlung chirurgischer Tuberkulosen). *Beitr. z. klin. Chir.*, 1913, lxxxvii, 208.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Within the last two years, 71 cases of tuberculosis were treated at the Garre Clinic by Iselin's method of röntgenization, but the good results described by Iselin were not obtained, in spite of the fact that the treatment was carried out just as described by him in the Basel Institute, and although, with only a few exceptions, mild cases were selected. The author concludes that, as a consequence of the good results reported by Iselin, experiments have no doubt been carried out in various places; but the fact that only a few cases have been published seems to him to indicate that at other clinics the results must not have been very brilliant. He cannot account for this difference in the results, but thinks that perhaps tuberculosis shows different degrees of malignancy in different locations. Of all the forms of tuberculosis treated, lymphoma was the one most favorably influenced; little or no reaction was seen in bone and joint tuberculosis. In many cases there was a decided change for the worse; there was proliferation of the granulation tissue in cases of fungus, which has never been reported before. The author thinks it desirable, for the sake of clearing up the question, for other hospitals, where the röntgen treatment of tuberculosis has been tried, to report their results.

KNOKE.

Ransohoff, J.: Osteitis Deformans, Central Sarcoma, Streptococcus Infection. *Lancet-Clin.*, 1913, cx, 672.

By Surg., Gynec. & Obst.

The patient, a male, 49 years of age, without any history of venereal disease, was in good health up to five years previous, when he began to suffer with pain in the left leg so severe, at times, as to demand morphia. Three years later he became quite lame as a result of the forward and outward bowing of the tibia. A soft tumor mass over the tibia was opened on the supposition of it being an abscess, but no pus was present. Following this incision the leg began to swell, reddened to the knee and a continuous fever developed which induced him to seek admission to the hospital. His temperature at this time was 103.5°; leucocytosis 23,000. The left leg from the ankle to below the knee was twice as large as the opposite one; the skin bright red, tense, and glistening. Over the center of the bowed tibia there projected from an opening a fungus mass, as large as a hulled walnut, which bled freely whenever touched. From this opening there was also a profuse foul, purulent discharge—the stain of which showed a streptococcus.

The skiagram shows marked bowing of the tibia with a chronic inflammatory process extending practically along the entire length of the bone. Rarefaction, hyperplasia, and subperiosteal condensation of bone are in evidence. The fungus mass is plainly seen projecting through an aperture in the compact anterior wall of the tibia at the point of greatest bowing.

The diagnosis of central sarcoma, secondary to deforming osteitis with extensive bone infection, was made and amputation through the lower third of the left thigh was performed under spinal novocaine anæsthesia.

The writer reports on the pathological findings which confirmed the diagnosis.

Ransohoff states that he has failed to find in the literature any mention of cases in which streptococcus infection has occurred in osteitis deformans or of central bone sarcoma.

CHARLES M. JACOBS.

Ely, L. W.: Diseases of Joints and Bone-Marrow. *Am. J. Surg.*, 1913, xxvii, 370.

By Surg., Gynec. & Obst.

Inflammation of the bone-marrow may be caused by any number of different organisms—chiefly the common pus-producing organisms.

In the more common form the original focus usually forms in the marrow of the metaphysis and spreads until it reaches the central marrow canal. The inflammatory process spreads through the cortex and involves the deep layers of the periosteum; here, pus forms and may make its way to the surface unaided.

When an osteomyelitis has run its course the sequestrum remains in the involucrum indefinitely. In treating osteomyelitis it has been the rule to allow Nature to do all she could before there was any operative interference; but Nichols advises the

removal of the sequestrum as soon as the periosteum has formed enough new bone to hold the limb in shape.

In syphilitic osteomyelitis and periostitis, syphilitic bone lesions may occur in the hereditary form of the disease, or in the late secondary or tertiary stage of the acquired form.

There is local destruction of bone and the formation of various sized collections of a mucilaginous material surrounded by sclerosed bone. These areas usually form just beneath the periosteum and form sinuses, the surface openings of which are dark red, ragged, and undermined. The thickening of the periosteum is peculiar and almost diagnostic as is the peculiar saber-shaped tibia. The chief treatment should be antisyphilitic drugs.

Typhoid osteomyelitis and periostitis are fairly frequent, coming on in the late stages of the disease, in convalescence, or after recovery. Abscess formations are frequent and fistulae following these often remain open for a long time. The treatment is conservative.

The author regards osteitis deformans—Paget's disease—as a chronic osteomyelitis of unknown etiology in which the bones become much thickened and asymmetrical. The new bone-tissue remains uncalcified, permitting great deformity of the long bones. The legs are bowed outward and seem too large for the trunk. The disease is considered incurable.

Rickets is a constitutional disease of infancy and childhood, characterized by bone changes, especially in the long bones. The most marked changes take place in the region of the epiphyseal line, which becomes irregular and broadened; the bones become soft and bent, and sclerosis takes place after the disease has run its course. The treatment is largely constitutional but deformities must be corrected by operation or by other means.

The condition of osteopsathyrosis idiopathica is characterized by a general deficiency in bone formation, both in the diaphysis and in the metaphysis. The chief clinical manifestations of the disease are the abnormal friability of the bones and the multiple fractures. From these the diagnosis is made. The only treatment is to protect the patient.

Osteomalacia is a disease of unknown etiology, characterized by an inflammation and degeneration of the spongy and of the dense bone. No true compensatory bone production takes place and the bones of the lower extremities bend and become unable to support the body. Treatment is usually fruitless.

An osteoma is a tumor which consists of bone-tissue and usually occurs on the skeletal bones. These tumors, which may be either multiple or single, are covered by a layer of periosteum alone, or by a layer of cartilage in addition. The treatment is removal. Recurrence is fairly frequent, but these tumors are not malignant.

New-growths of the marrow and periosteum may be either benign or malignant. Of the former class

the so-called benign myeloma, or giant-cell sarcoma, is the most important. Until recently, this tumor was regarded as a variety of sarcoma, but it is now thought by many authorities to be a distinctly benign growth with a tendency to local recurrence, if not thoroughly removed.

Myelomata occur most frequently in young adults, and usually without any known cause. The myeloma is a new-growth of the marrow, consisting of large numbers of the so-called giant, spindle, and round cells, with a connective-tissue stroma. This has a thin bone shell covering. As the tumor increases in size, the bone shell expands, but there is little if any production of new bone. The röntgen rays show a rarified cystlike area in the bone covered by a bulging, well defined shell of bone.

Some authors say the positive diagnosis from other growths cannot be made before operation.

Under artificial ischæmia the myeloma must be opened and every particle of the diseased tissue must be removed with a curette, and the cavity swabbed with carbolic acid and alcohol. If the tumor returns, the operation may be repeated several times if necessary.

R. O. RITTER.

Taylor, H. L.: Charcot Joints as an Initial or Early Symptom in Tabes Dorsalis. *J. Am. M. Ass.*, 1913, lxi, 1784. By Surg., Gynec. & Obst.

The author reports 23 cases, and draws the following conclusions:

1. Charcot joints and spontaneous fractures are often initial or early symptoms of tabes dorsalis.
2. Charcot joints are frequently of traumatic origin and often follow fractures and lesser injuries.
3. The results of orthopedic treatment in early or moderately advanced cases are very satisfactory.
4. Orthopedic treatment by protective splinting should also be used in the loose joints of tabes due to hypotonus before the appearance of swelling and effusion.
5. The term "tabes dorsalis" should be used in preference to the term "locomotor ataxia."

GEO. I. BAUMAN.

Morley, J.: Traumatic Intramuscular Ossification. *Brit. M. J.*, 1913, ii, 1475. By Surg., Gynec. & Obst.

After a consideration of the theories of causation, experimental confirmation, histology, differential diagnosis, prognosis, and treatment of traumatic intramuscular ossification, the author arrives at the following conclusions:

1. Traumatic intramuscular ossification—"myositis ossificans"—is due to migration of osteoblasts into adjacent contused muscle and blood-clot, after destruction of the periosteum and loss of its function as limiting membrane to the growth of bone. It is essentially the same process as callus formation.

2. The condition may be produced experimentally in animals by reproducing the same mechanical conditions by an aseptic open operation.

3. In a case of difficulty in diagnosis from sarcoma, open exploration is advisable.

4. Simple excision is usually, though not invariably, followed by recurrence.

5. Conservative treatment condemns the patient to a long period of disability, which may occasionally be permanent.

6. Excision combined with grafting of deep fascia on to the denuded surface of bone gives the best prospect of rapid and complete recovery, and is urged for all cases not complicated by ossifying peri-arthritis.

7. Osteoblasts and chondroblasts are the same cells under different conditions of nutrition.

M. S. HENDERSON.

FRACTURES AND DISLOCATIONS

Burnham, A. C.: Spontaneous Fracture and Bone Cysts. *Interst. M. J.*, 1913, xx, 1021.

By Surg., Gynec. & Obst.

The author reports the case of a policeman who fell and fractured his leg. Subsequent examination by the X-ray showed an area of softening in the tibia at the point of fracture, and the picture resembled very closely that of a benign bone cyst. Operation revealed a giant-celled sarcoma; after amputation the patient made an uneventful recovery.

The author comes to the following conclusions:

(1) Certain cases of giant-cell sarcomata very closely resemble benign bone cysts both in the early symptoms and in the radiography of the early stages of the growth; (2) every case of fracture from slight trauma should be X-rayed; and (3) in giant-cell sarcoma of the long bones there is often slow growth with the absence of metastases. J. H. SKILES.

Jones, R.: An Orthopedic View of the Treatment of Fractures. *Am. J. Orth. Surg.*, 1913, xi, 314.

By Surg., Gynec. & Obst.

Every fracture is a potential deformity and the first consideration in treatment is to maintain a true anatomical alignment of the shaft in case of long bones. The traditional wooden board is not the best for this purpose, as no human limb will fit a flat board. Sheet iron, gutter-shaped, fitted to each case and padded to avoid bony prominences, is best, and distributes the pressure around the limb, thus precluding pressure-sores. In fractures, near or in the joints, the proper disposition of small fragments is of great importance in restoring alignment, especially of axis of movement. If properly handled the tendons and muscles passing a joint are of assistance in treatment; for example, in the elbow with fracture of condyles, the triceps tendon can serve as an effective splint if the arm is put in acute flexion, as is now almost universally done instead of the old time right-angle method.

It is well to follow the rule of Thomas; namely, "that a joint which is tender to palpation is not ready for movement." If, after tenderness has dis-

appeared, five or ten degrees motion is obtained, a good prognosis may be given. Passive movement should later be done once in each direction in which motion is limited. Passive movements to and fro are likely to stir up inflammatory reaction, which results in more adhesions. Massage should be used lightly to avoid stimulating the young callus to fresh overgrowth. Experience shows that, except in the actual condition of disease, nearly all cases of "non-union" are really cases of "delayed union."

The time required for union is a "personal equation" and may be two or three times the expected period. The author uses the "hammer and dam" method of Thomas in these cases. The region of the fracture is hammered with a rubber mallet, then a tight elastic band is placed above and below at a distance of several inches. Physiological use is the best agent to assist in making union solid, but it is wise to protect a fracture with artificial support even after it appears to be firmly united. In fracture of the neck of the humerus the upper fragment is frequently abducted; after the fracture, forcible breaking of adhesions should not be attempted for at least three months.

Fracture of the shaft of the humerus rarely requires operation, except to free the musculospiral nerve from callus. Superfluous callus in front of the elbow-joint will absorb under continuous pressure of acute flexion. In fracture of both bones of the forearm if the ulna is held straight the radius will almost take care of itself. It is important to see that supination is possible before the callus gets too hard. Gutter-shaped metal splints are best. Stiffness of the wrist and pain on motion six months after a callus fracture nearly always means an improper reduction; the deformity should be corrected under gas. Extreme tenderness in the "anatomist's snuff-box" usually means fracture of the scaphoid; in this and other fractures of the carpus the wrist should be put in dorsiflexion. For fracture of the shaft of the femur the author does not use weight and pulley extension but overcomes the shortening by extension with a caliper splint, the counter pressure of which comes on the perineum; this, he claims, prevents muscular spasm as a result of varying muscular tension. In fractures of the neck of the femur he puts the leg in abduction in a double Thomas hip splint. Impaction is broken up only if there is rotation or material shortening. Fractures of both bones in the lower fourth of the leg are usually operated upon by the author because of difficulty in securing alignment by any other method.

W. A. CLARK.

Parham, F. W., and Martin, E. D.: A New Device for the Treatment of Fractures. *N. Orl. M. & S. J.*, 1913, lxvi, 451. By Surg., Gynec. & Obst.

The authors discuss the difficulty of holding oblique fractures by means of wires and nails. They have used a band of metal three-eighths of an inch wide by 6 inches in length, made with a slit in one end. This wire is passed about the fracture and

tightened by passing through the slit, cutting off the extra length and turning down the end.

H. W. MEYERDING.

SURGERY OF THE BONES, JOINTS, ETC.

Fredet, P.: The Treatment of Grave Fractures after the Technique of Lambotte (Le traitement des fractures graves suivant la technique de Lambotte). *J. de chir.*, 1913, xi, 289.

By Surg., Gynec. & Obst.

The author's experience comprises twenty cases of fractures of the long bones treated by the open method, following the technique of Lambotte. He restricts the indications for open treatment to those cases which are incapable of healing by the conservative methods. His cases have led him to the following general conclusions: (1) Operation should not be attempted without perfect equipment. (2) It should be restricted to grave fractures, which cannot heal by bloodless methods; to those in which there is a chance that they will not heal by bloodless methods; and those which apparently will be excessively delayed in union. (3) The operation is too difficult to be undertaken by any but experienced surgeons. The author believes that the open treatment of fractures will find as broad a field for itself as has the operation for the radical cure of hernia.

The most favorable time for intervention is the tenth day following injury, but for compound fractures, it is necessary to wait until the wound has entirely healed. The author has waited as long as one hundred and thirty-four days to avoid operating in an infected field, and then operated with good result.

Rigorous aseptic precautions for the operative field and the assistants are insisted upon. The entire limb is washed the day preceding the operation with soap, water, alcohol, and ether; and on the operating table, the surgeon himself performs the final cleansing with benzine-iodine and then with tincture of iodine. The surgeon and his assistants use the usual precautions and never put the gloved hand into the wound.

The primary considerations in the operation as devised by Lambotte are, the perfect reduction of the fracture and the solid and lasting maintenance of that reduction. There follows a minute description of the technique followed by the author with what he finds to be improvements on the operation and instrumentarium of Lambotte. The point especially emphasized is the importance of large incisions—more than one if necessary—which denude the bone of all covering and allow the fragments to be brought up freely into the wound. After the fragments have been reduced and held in place by instruments modified by the author, the different methods of maintaining the reduction are described.

Oblique fractures are best held by a circle of bronze-aluminum wire, which, instead of being twisted, is tied by means of a traction instrument of

the author's. The screw is to be used to advantage where fragments are to be fixed to the shaft or in T-fractures, but cannot be expected to be permanent when the head rests subcutaneously.

The plates of Lambotte are the favorite fixation material of Fredet. He considers the usual method of applying screws in bone to be wrong in principle. The hole in the bone to receive the screw should be bored by an instrument which makes threads in the bone corresponding to the threads in the screw. The external fixation apparatus of Lambotte is mentioned as useful in treating fractures which must be held in place by an appliance attached at some distance from the fracture. None of these methods, however, should be used in all cases to the exclusion of the others. If the site of fracture is of doubtful sterility, all foreign material should be avoided at the site and the external appliance of Lambotte is indicated. If an aseptic fracture is very oblique and superficial, the wire ligature is the best method; if the fracture is transverse or slightly oblique, the bone plates are best; but if the fracture is deep, the plates reinforced by wire ligatures are preferred.

The wound is sutured in layers—periosteum with linen or catgut, then the muscle and fascial layers. Finally, the skin is closed with loosely drawn sutures which are left in place until the first dressing. The line of sutures is touched with tincture of iodine and a sterile bandage carefully applied. The tibia and femur when fractured are encased in plaster. In order not to have an immense cotton dressing over the wound, sterile jersey under the plaster is used to prevent the moisture of the plaster from penetrating. The cast and bandage are left undisturbed during the usual time of healing for corresponding closed fractures; early passive motion or massage are condemned on the ground that they interfere with the maintenance of the fragments in good position.

The author concludes with the statement that he had always considered his results in treating fractures by closed methods sufficiently satisfactory until he compared them with the results he has obtained by the operative treatment.

ELLIS FISCHER.

Dujarier, C.: The Open Treatment of Fractures of the Leg: Old and New (Du traitement sanglant des fractures de jambe récentes et anciennes). *J. de chir.*, 1913, xi, 269. By Surg., Gynec. & Obst.

In the last eight years the author has treated thirty-two closed fractures of the leg by the open method. He gives a review of his technique, results, and indications.

Preliminary precautions are taken that there be no vesicles or small suppurating spots on the skin. If these be present he waits until he is sure the skin is perfectly clear. He does not consider this a loss of time since, in his opinion, between the fifth and tenth day following the injury is the most favorable time for operation.

For anæsthetic he uses for most cases spinal anæsthesia, consisting of 5 cg. of stovaine, and has

never noted bad effects from it. His one contra-indication is tabes.

For skin sterilization the author paints the entire circumference of the leg with tincture of iodine, and two towels are rolled about the leg above and below the field of operation. Asepsis on the part of the operator and his assistants is rigorously exacted; neither the gloved fingers nor any instrument which has touched the gloved hand is allowed to enter the wound.

To expose the fracture, an incision 20 cm. in length is made on the internal surface of the tibia with its center at the site of fracture, as shown by two radiographs. The knife is carried down to the bone through the periosteum and is never allowed to leave the bone except at the line of fracture.

To free the fragments, the author raises the periosteum completely from the superior fragment first, in such a way that the bone can be entirely brought up out of the wound. This fragment is seized and immobilized with the bone clamp, care being taken not to produce a new fragment of bone. The end of the bone is carefully freed of blood-clots and all new formations to the original line of fracture; the inferior fragment is next treated in a similar manner. If there are one or more intermediate fragments, which are entirely detached, they are removed and placed in a sterile compress saturated with serum, in which they are kept until the fragments are put in place and used if possible. When there is pseudo-arthritis or simple delay in union the newly formed bone is extirpated by means of scissors or a gouge and the two fragments are separated. An effort is made to make the ends of the fragments conform to their original line at the time of fracture; in other words, converting an old fracture into a recent one.

To reduce the fracture the author invariably uses the extension apparatus of Lambotte which is described in detail. Usually when there are but two fragments and the fracture is recent, perfect coaptation is obtained; when there are multiple fragments or when the fragment is very oblique, a reduction approximating one or two millimeters is considered satisfactory. The extremities of the fractures are never resected.

To keep the fractures in place the author uses either a double pronged hook or a circle of wire. The prongs of the hook are three and one-half centimeters apart for use on the tibia, and a special drill and hammer are used for their application. The method of circling the fragments with wire is used in oblique fractures and the technique of Lambotte is closely followed. The wire is of red copper 2 mm. in diameter. Two circles are made as far apart as possible and secured by twisting first with the hand and then with strong forceps. In a few cases the author has found it necessary to use both the hook and the wire.

Before the skin is sutured the wound is washed with warm serum in order to remove blood-clots

and debris. No vessels are ligated, except occasionally the large subcutaneous veins, and no attempt is made to suture the periosteum separately. In case the skin edges turn in, a few superficial skin sutures are used. Drainage is never used.

An aseptic dressing is next applied to the wound. When the hooks are used the leg is put up in plaster which extends only to the knee. Occasionally the author uses board splints. Where the wire has been used no supports other than a voluminous bandage and rest on a pillow are deemed necessary. After ten to twenty days the wires are removed and the leg rebandaged. The cast is removed on the thirtieth to thirty-fifth day; if union is complete the leg is left free and massages commenced. The patient usually gets up on the thirty-fifth to fortieth day.

The post-operative course is very smooth. There is severe pain the first two days, accompanied by a temperature of 38° to 38.5° C. In only two cases has the author experienced superficial suppuration.

In regard to the fixation material, the author, in his first cases, found it necessary to remove all the hooks. In his last twenty-five operations he has removed them in only three cases. The wire, however, he has always removed from the thirtieth to fortieth day at the latest on account of the irritation it causes to the skin. The procedure is quite simple and is done under local anæsthetic. In considering the question of union, Dujarier has obtained consolidation in thirty to forty days for recent fractures in all cases except four, in which it was delayed from two months to a year. In cases of pseudo-arthritis and of delayed union, occasionally the leg is solid at the end of forty days. At the end of this time a silicate splint is applied and the patient is made to walk on the leg. This procedure is continued until there is firm union.

The author has found his results by the open method of treatment so far superior to those which he obtained by the closed method of treatment, both for recent and for old fractures, that he is constantly broadening his indications for the open method of treatment. These indications are variable but are roughly stated as follows: (1) In transverse fractures, before or after reduction, the fragments are not partially in contact. (2) In oblique fractures operation is indicated in almost every case, the exceptions being those with very little displacement and with overriding of less than one centimeter. (3) The choice between hooks and wires is made according to the nature of the fracture as shown by anteroposterior and lateral radiographs. The hooks are used in transverse and slightly oblique fractures. The contra-indications are the general condition of the patient or such local conditions of the skin as render an aseptic operation impossible. He concludes that the treatment of fractures by the open method is difficult surgery, but when well carried out excellent functional results are obtained without incurring serious risk to the patient.

ELLIS FISCHEL.

Hitzrot, J. M.: Some Problems in Bone Surgery.
Wis. M. J., 1913, xii, 211. By Surg., Gynec. & Obst.

The author takes up in five stages the theory of regeneration of bone as advanced by Dupuytren, and reviews the work of Wieder on regeneration, giving the following five stages:

1. First to fourth day, period of infiltration.
2. Fourth to twelfth day period: gradual absorption of the exudate from the soft parts and its replacement by connective tissue. The endosteum undergoes formation of osteoid trabeculae at a distance from the line of fracture.
3. Twelfth to eighty-fifth day: stage of reorganization. Augmentation of the callus where it is most needed and absorption where it is not required.
4. Permanent callus formation, eighty-fifth to two hundred and eightieth day: absorption of callus with re-deposition of denser bone in the dilated spaces, and the appearance of distinct lamellae in the new bone. Wieder did not continue his work to the fifth stage, as did Dupuytren, but he points out that in fractures that had united perfectly there is, up to the third month, nothing but cartilage or connective tissue across the line of fracture. Cartilage was always found on the concave side of the fracture with its apex at the line of fracture and its base at the periosteum.

The author states that his work and the information derived from it so closely resemble that of Wieder that if repeated at length they would paraphrase his findings already given. He states that the most important factor in the stage of exudation is the formation of fibrin.

In conclusion, judging from his experiences, he believes that bone graft covered by periosteum, and with endosteum on its inner surface, is the best graft to use. He points out that there are discrepancies in all the experimental work; that there are certain undetermined factors which seemingly cause a failure of bone production by the periosteum under identical conditions with those in which bone is produced, and that the endosteum is an important factor in the regeneration of transplanted bone.

P. B. MAGNUSON.

Dennis, W. A.: Treatment of Osteomyelitis. *St. Paul M. J.*, 1913, xv, 605.

By Surg., Gynec. & Obst.

The author wishes to emphasize certain well-established principles in the treatment of septic inflammation of the bones which are often lost sight of. In acute osteomyelitis the opening in the cortex should extend as far as there is any sign of pus in the medullary cavity. Simple drainage is all that should be sought. The medullary cavity should not be curetted since that procedure destroys the endosteum and removes the last chance for healing without necrosis. Nichols deserves the credit for emphasizing this important point. Even so valuable a work as Von Bergman's *System of Surgery* makes the mistake of recommending the curet-

tage of the medullary cavity in acute cases. The English system of Cheyne and Burghard does the same.

Some of the cases of acute osteomyelitis are accompanied by effusion into the neighboring joint. This may be due to invasion by the infecting organism, but is more often due to secondary circulatory changes and oedema. Even if infected, the joint should not be opened entirely drained, as was taught until the past few years, but should be aspirated and irrigated, or injected, and this repeatedly if necessary. The open drainage has almost invariably resulted in a stiff joint.

The author calls attention to an etiological factor which is infrequently mentioned. He states that the importance of suppurative middle ear disease has apparently been entirely overlooked, and yet an inquiry into the history of all the cases coming under observation during the past two years shows that a large percentage, especially in children, had suffered from suppurative otitis media. Granting the correctness of this observation, its importance can hardly be overestimated; first, because it shows the necessity for competent treatment for this condition whenever found; second, that of taking care of any active process that may be there present at the time of operating upon a case of osteomyelitis; and finally the prime importance of early care of those two great causes of suppurative middle ear disease, inflamed tonsils, and adenoids. The reason that active suppurative osteomyelitis is so often multiple and consecutive is that while the first bone involved is treated the infecting focus is allowed to remain undisturbed and often even unsuspected. The importance is therefore emphasized of determining whenever possible the primary focus of infection and subjecting it to efficient treatment.

The author then takes up the question of the value, in chronic cases, of various plugs and comes to the conclusion that Mosetig's iodoform wax plug, provided it is used according to directions, gives the best results.

EDWARD L. CORNELL.

Brown, W. L., and Brown, C. P.: Preliminary Report on Bone and Periosteal Transplantation. *Surg., Gynec. & Obst.*, 1913, xvii, 681.

By Surg., Gynec. & Obst.

During 1911 to 1913, the authors carried out a series of experiments on dogs, to determine if possible the answer to the following questions:

1. Will periosteum produce bone, when transplanted into tissues, without bony contact?
2. Will periosteum produce bone, when left attached to bone and periosteum at proximal end, passed around fascicula of muscle, and again contacted with periosteum?
3. Will bone reproduce bone and continue to live, when deprived of periosteum and transplanted into the tissues without contact with living osteogenic tissue?
4. Will bone live and reproduce bone, when transplanted into the tissues, not deprived of its

periosteum, and not contacted with living osteogenetic tissue?

5. Will bone live and reproduce bone, when transplanted and contacted with living osteogenetic tissue?

6. Will bone reproduce bone without the aid of periosteum?

7. Is it essential that the transplant have a function in order to be permanent?

Based upon their experimental work to date, the authors draw the following conclusions:

1. They were unable, in any experiment, to reproduce bone from free periosteal transplants into the subcutaneous tissue and muscle.

2. They were unable to reproduce bone in any periosteal flap which was raised, left in contact with the bone, passed through muscle, and again contacted with periosteum, with the one single exception where there was a small nodule of bone formed apparently in the free end of the flap, corresponding to another nodule on the shaft of the bone opposite, leading them to the belief that because no bone had formed anywhere else in the flap, the bone in the tip of the free periosteal flap was due to osteoblasts raised from the corresponding area on the shaft of the bone.

3. They were unable to reproduce bone in any experiment from free bone transplants, without periosteum, into the subcutaneous tissue and muscle, regardless of the age of the transplant. Absorption was the rule in every case.

4. They were unable to produce bone in a single experiment where bone was transplanted free, periosteum being left intact, into the muscle or subcutaneous tissue. These transplants were uniformly absorbed.

5. They were uniformly able to reproduce bone, when transplanted and contacted with living bone, if it were in position where it had a function to perform.

6. Other necessary conditions being present for its reproduction, bone reproduces bone without the aid of periosteum.

7. The transplants that were contacted with living bone and had no function to perform were inclined to absorption.

8. While periosteum may be an aid to the life and growth of bone, the authors were not able to prove, in any experiment, that it was at all essential.

Allison, N., and Brooks, B.: The Mobilization of Ankylosed Joints. *Surg., Gynec. & Obst.*, 1913, xvii, 645. By Surg., Gynec. & Obst.

The object of the experiments was the study of the changes which follow the interposition of certain substances between denuded joint surfaces. Dogs were used for all experiments, and the substances studied were:

1. Cargile membrane.
2. Free transplants of fascia lata.
3. Pedunculated flaps of fascia lata.
4. Chromicized pig's bladder (Baer).

5. Fascia lata which had been treated by a chemical process, in which the fascia was impregnated with finely divided silver.

From dissection and microscopical study of the experimental joints, after varying periods, the following is emphasized:

1. Cargile membrane does not prevent union of opposed denuded joint surfaces.

2. Fascia lata prevented union of the joint surfaces only in those experiments in which the fascia transplant underwent necrosis and absorption. In the instances in which the transplant preserved its vitality, it adhered to the joint surfaces and bound them together.

3. Pedunculated flaps of fascia were in no way superior to free transplants, and they had the disadvantage that the pedicle persisted as a band limiting joint motion.

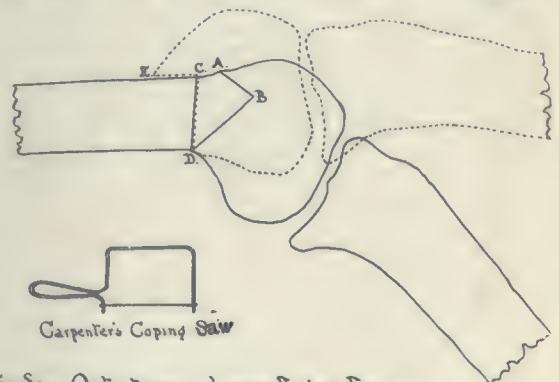
4. Chromicized pig's bladder (Baer) produced in the joints a large amount of fibrous tissue which bound the denuded joint surfaces together.

5. The silver impregnated fascia was a relatively non-irritating absorbable substance which prevented the union of the joint surfaces.

Osgood, R. B.: The End-Results of Attempts to Mobilize Stiffened Joints. *Surg., Gynec. & Obst.*, 1913, xvii, 664. By Surg., Gynec. & Obst.

After discussing the successes and failures of attempts to mobilize stiffened joints, the author states that the operation is applicable to cases of permanent flexion of the knee-joint, with useful motion in further flexion remaining: (1) Cases in which, from growth or disease, the contour of the condyles offers bony resistance to complete extension; (2) long continued contractures in which forcible extension would bring too great pressure on vessels and nerves.

The technique consists of two-inch incisions on either side of the femur just above the condyles, posterior to the upper cul-de-sac of the knee-joint; blunt dissection carried over the top of the femur beneath the upper cul-de-sac joining the two incisions; a small saw-blade or carpenter's coping saw (see figure); at B the angle of the cut is changed



Vig-Saw Osteotomy - Lower End of Femur.

and a saw-cut made to D. The saw is then disengaged from the jaws of the instrument and a fresh saw is passed over the top of the bone and engaged in the jaws. A second saw-cut is then made in the direction of CD to join the saw left for purposes of orientation. The quadrilateral portion of bone being now entirely free (ABCD) it is pushed out through one of the incisions and the leg straightened. The line BD is opposed to line CD, with the lip of the condyle along line EC extending over the top of the proximal portion of the femur, thus preventing backward displacement of the condyles.

The advantages of the operation are: (1) Simplicity of performance; (2) avoidance of injury to the upper cul-de-sac of knee-joint and impossibility of common backward displacement of the lower end of the femur.

Eloesser, L.: Implantation of Joints. *Calif. St. J. Med.*, 1913, xi, 485. By Surg., Gynec. & Obst.

The author cites two cases of implantation of joints, reviews briefly the literature, and discusses the question of regeneration of bone.

In his first case of ankylosis of the ankle, following resection of the astragalus, he exposed the joint, resected the malleoli, and gouged out a space in the os calcis to receive the graft. Portions of the tibia, fibula, and astragalus were removed from a cadaver, and preserved in Ringer's solution until negative blood examinations were obtained; seven weeks after operation, suppuration persisted and amputation was done.

The preserved specimen showed a firm fibrous union of the tibial portion of the graft, and around the bones was a mass of callus thrown out by the remnants of the patient's tibial periosteum which surrounded the implanted joint.

The second case was one of ankylosis at the base of the ring finger. An implant was made 60 hours after the death of the donor; the wound has healed, and, as a result, the patient has 35 degrees active and 60 degrees passive motion in the joint; there is a firm bony union.

The author's conclusions are best given in his own words:

"1. Implantation of joints is a feasible and useful procedure.

"2. Much of the implanted bone becomes necrotic; it is not shed, however, but amalgamates and is absorbed and replaced by living bone.

"3. A small part of the implanted bone remains alive, viz., the superficial inner and outer layers.

"4. Much of the implanted periosteum and endosteum remains alive, and is probably the source of the new bone.

"5. A subsequent arthritis deformans does not seem to develop in the new joints.

"6. The fresh cadaver is the most practicable source of material.

"7. Only fresh cadavers of patients who have died suddenly of a non-infectious disease should be used.

"8. Absence of infectiousness should be assured by bacteriological and serological tests."

ISIDORE COHN.

Magruder, E. P.: Infantile Paralysis Affecting the Lower Extremities; Its Surgical Treatment and Possibilities of Cure: A Preliminary Report. *J. Am. M. Ass.*, 1913, lxi, 1705.

By Surg., Gynec. & Obst.

The author reports the operation and after-treatment in a case of anterior poliomyelitis, presenting a complete paralysis of the entire right lower extremity, except for a slight tonicity of the biceps muscle. The operation consisted in transplantation of the biceps into the patella and a double fixation of the ankle-joint, by means of three screws. "With the foot in the corrected position at right angles to the leg, one screw was passed through the external malleolus, astragalus, and calcaneus, another through the internal malleolus almost at right angles to the first, while a third screw was passed through the scaphoid and cuboid, fixing the key of the arch of the foot. The head of the femur was returned to the acetabulum and a plaster of Paris cast snugly applied from the foot to the costal margins and allowed to remain on for six weeks. The wounds healed by first intention."

Following this procedure a long course of patient, persistent efforts at functional use was carried out and now the patient can walk as far as 50 feet without supports of any kind.

The author believes that fixation of the ankle by this method is a valuable substitute for arthrodesis, much less destructive of tissue, quicker in result, surer, and simpler. Moreover, the screws can be removed when sufficient strength has returned, thus restoring in part the integrity of the ankle-joint.

PAUL P. SWETT.

ORTHOPEDICS IN GENERAL

Mayer, L.: Paralysis of the Quadriceps Femoris: A Clinical Study of the Paralysis and Discussion of the Mechanical Principles Involved. *Am. J. Surg.*, 1913, xxvii, 441.

By Surg., Gynec. & Obst.

The author takes exception to the opinions of Volkmann and Hoffa that quadriceps paralysis invariably leads to genu recurvatum and to the opinion of Duchenne and Oppenheim that a patient thus paralyzed is unable to stand with knees flexed. To prove this contention, Mayer has made a model representing the mechanical conditions present in quadriceps paralysis and he is able to balance this model with the parts in a position of flexion at ankle, knee, and hip. He has also taken cinematographic photographs of a patient with quadriceps paralysis, showing the patient walking, climbing stairs, and rising from a sitting position. These show that the action of the quadriceps can be replaced to a great extent by the weight of the body, provided the other muscles of the thigh and leg are

well developed and properly coördinated. A moderate degree of equinus position aids in this extensor effect of the body, by bringing its center of gravity posterior to the new fulcrum — the heads of the metatarsals — thus established. The gluteus maximus and the soleus act directly as extensors of the knee by drawing the thigh and calf backward. These facts, the author claims, provide contra-indication to operation for an isolated paralysis of the quadriceps extensor.

GEO. I. BAUMAN.

Geist, E. S.: The Etiology, Diagnosis, and Treatment of Weak-Foot and Similar Conditions. *St. Paul M. J.*, 1913, xv, 596.

By Surg., Gynec. & Obst.

The author gives the etiology of muscular imbalance of the common static weak-foot as being due to ill-fitting shoes, callosities, ingrowing nails, faulty posture, hard modern floors, muscular weakness resulting from illness and lack of exercise, and deformity. He treats these conditions by the selective use of various exercises, Thomas' heel, Ochsner strapping, elevated inner sides of shoes, appropriate shoes, and a modified celluloid brace. He also calls attention to the promiscuous use of arches in all cases presenting foot trouble.

In discussing those conditions which simulate weak-foot, i. e., Morton's foot, calcaneal spurs, tuberculous, foreign bodies, accessory bones, varicose veins, fractures, arteriosclerosis, endarteritis obliterans, and multiple arthritis, the author lays especial emphasis on the use of the X-ray, as an aid in diagnosis.

H. W. MEYERDING.

Whitman, R.: The Importance of Positive Support in the Curative Treatment of Weak Feet; and Comparison of the Means Employed to Assure It. *Am. J. Orth. Surg.*, 1913, xi, 215.

By Surg., Gynec. & Obst.

The primary disability of so-called flat-foot is a lateral distortion, the lowered arch being secondary. There is a passive attitude of abduction, which is characteristic of all weak feet; the cure then is rationally a substitution of normal attitude. For children, support is necessary because the coöperation of the patient can not be had. The brace for weak feet is, as used by the author, an instrument of precision; the cast over which the brace is made is taken with the foot lying on its outer border, the weight of the limb in this position correcting the abduction. The inner flange of the brace rises above the astragaloscaphoid articulation; while the outer

flange, which is lower, extends from behind the posterior tubercle of the os alcis to a joint behind the base of the fifth metacarpal. The brace thus prevents lateral distortion; it is a positive support; it not only prevents deformity but the predisposition to it and enforces a proper attitude in walking. It differs from other plates in not being broad in front and not enclosing the heel. It is made of unyielding metal. A necessary accompaniment is a properly fitted shoe which will tend to throw the weight outward instead of inward. Treatment by gymnastics is ineffective unless deformity is restrained. A positive brace is applied to hasten a permanent cure and enable the patient to dispense with all support.

W. A. CLARK.

Davis, G. C.: The Treatment of Hollow-Foot: Pes Cavus. *Am. J. Orth. Surg.*, 1913, xi, 231.

By Surg., Gynec. & Obst.

The main characteristic of hollow-foot is elevation of the arch. There are two varieties: paralytic and non-paralytic.

For the paralytic cases there is no standard of treatment applicable to all cases. Operative treatment is to be undertaken only after conservative treatment, two to five years after the initial attack, the aim being to support the anterior part of the foot and depress the arch. To accomplish this, a steel-shanked shoe with double strap over the insole may be used. In equinus, tenotomy of the achilles suffices. For calcaneus it may be necessary, in addition to tenotomy of the plantar fascia, to transplant the tendons of the posterior tibial and the peronæi to the os calcis. The operation of Forbes, transplantation of the extensor longus hallucis to the head of the first metatarsal, may be necessary to hold up the ball of the foot.

Procedures necessary in the treatment of the non-paralytic type are: tenotomy of the plantar fascia and tendon of the flexor longus hallucis, lowering of the elevated arch by instrumental means, wearing of steel-shanked shoes with a strap across the instep.

In case of complete paralysis of the calf muscles, extreme calcaneus, and flail-foot, the Whitman astragalectomy, or the more complicated osteotomy of Jones, should be done. The author describes the technique of his own operation for this condition, which differs from both of these. He makes a transverse horizontal section of the tarsus through the subastragaloid joint, then pushes the foot backward and the leg forward, holding it in that position in plaster for eight weeks.

W. A. CLARK.

SURGERY OF THE SPINAL COLUMN AND CORD

Venable, C. S.: Bone Implantation in Pott's Disease. *Tex. St. J. Med.*, 1913, ix, 246.

By Surg., Gynec. & Obst.

The author briefly describes the invasion, predisposing causes, and pathology of Pott's disease,

and with some detail discusses the typical Albée operation.

In a short report of one case, the usual predisposing causes, as tubercular parentage, faulty nutrition, the exanthema and direct cause, and the

tubercle bacilli lodging in fertile soil, are all mentioned.

The anatomy of the blood supply and the formation of the vertebrae, with the pathology and progress of a typical tubercular process with nature's attempt at repair, is also covered.

The author states that absolute rest is the essential in the cure of this disease, and has been the keynote of all treatment since the disease was described by Pott, but he believes that the so-called classical treatment of rest in bed, decubitus and extension, corsets and other mechanical devices, with the object of fixation of the diseased area, has not been satisfactory.

The typical Albée operation is described in some detail; the spines above and below the diseased area are exposed and split, and a wedge from the tibia inserted and sutured, and the wounds closed. Following this, mechanical effects are noted at once, and only rest in bed, the patient being allowed to move from side to side, with the usual general hygienic measures, is all that is needed.

No mechanical support is used, and recovery is uncomplicated, and the repair progressive.

A report is given of a tailor, who had been unable to work for eighteen months, because of pain, but who was able to return to work after fourteen weeks from the date of operation. C. C. CHATTERTON.

SURGERY OF THE NERVOUS SYSTEM

Lippens: Luxation of the Ulnar Nerve (La luxation du nerf cubital). *Bull. de l'ass. med. belge d. accid. du travail*, 1913, x, No. 2. By Journal de Chirurgie.

The ulnar nerve is the only one in the body that can be dislocated. At the elbow it lies in the bottom of a groove formed by the internal condyle inside and the olecranon outside. It passes between the two heads of the flexor carpi ulnaris muscle. It is, moreover, kept in place by a transverse fibrous band extending from the olecranon to the internal condyle. As the result of a fall, a violent effort, or an injury, which may be insignificant, one of the muscular bundles of the flexor carpi ulnaris or the fibrous band may be stretched or torn. Then the nerve is not held firmly in its groove. Every time the patient flexes his forearm on his arm quickly the nerve passes in front of the internal condyle. It is an intermittent dislocation and it is surprising that it does not take place oftener when we consider the frequency of injuries to the elbow. But in addition to the immediate cause there must be a predisposing cause in the shape of inefficiency of the natural means of holding the nerve in place. Incomplete development of the internal condyle is as important from this point of view as absence of the fibrous band.

The symptoms do not leave any doubt as to the nature of the affection. The nerve is displaced with every flexion of the forearm and there is severe pain in the region supplied by it. The continual irritation of the nerve finally causes neuritis, which may lead to serious consequences if not treated in time. The treatment consists in exposing the nerve and making a new sheath, either from the periosteum of the olecranon and internal condyle or from the neighboring aponeurosis.

Lippens had a case in a workman as a result of a fall on the elbow. At the first operation he detached the periosteum from the internal condyle and sutured it over the nerve to the tendon of the triceps. There was recurrence and the second time he detached the periosteum from the olecranon and sutured it to that of the internal condyle. This resulted in complete recovery.

J. DUMONT.

Perekropoff, A. J.: The Regeneration of Nerves by Uniting the Ends with Blood-Vessel Tubes (Die Regeneration von Nervendefekten bei Vereinigung der Enden durch Gefässröhren (Arterien und Venen). *Ann. d. k. Univ. Kasan*, 1913, lxxx, 1. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The great experimental work of this author, which has been published also as a dissertation (Kasan, 1913), was carried out on dogs. After resecting pieces of the sciatic and tibial nerves, 1, 1½, and 2 cm. long, the gaps were filled in with arteries and veins, and the process of regeneration, especially the method of penetration of the nerve fibers, was studied. The literature of nerve suture is treated in detail, and cases are cited in which the attempt was made to protect the nerve suture with blood-vessel tubes (Foramitti, Hashimoto, Tokuoka, Treutlein, Spitzzy, Von Eiselsberg, Lexer, Wrede, and others).

The author's own cases include 37 experiments on 28 dogs; ten experiments were on the sciatic nerve and 27 on the tibial — four times the carotid artery of the same dog was used. Veins were used in 33 experiments, the jugular being used, either fresh or prepared by Foramitti's method, in ten experiments. The suturing was done with the finest silk and catgut. The duration of the experiments was 15 to 377 days. The specimens for microscopical examination were prepared by Ramón y Cajal's method, and colored by Weigert's and Von Gieson's stain.

On the ground of his experiments and the microscopical pictures, the author comes to the following conclusions: The regeneration of the peripheral end of the nerve takes place as a result of the nerve fibers of the central end growing through the blood-vessel. The peripheral end and spliced pieces of nerve do not influence the growth of the fibers in the sense of neurotrophism, but only serve to point out the direction of growth. The vessel tubes of the arteries and veins are suitable material for uniting the ends of nerves; the arteries are absorbed very slowly. Fresh vessels of the same animal are to be preferred to prepared vessels.

The veins are more convenient to use for material than the arteries. The vessels are not only adapted for uniting widely separated ends of nerves, but they are a good protective material in nerve suture and neurolysis. The nerve fibers grow through the lumen of the vessel and provide the peripheral end with axis cylinders, even when it is two or three cm.

away. The growth of the nerve fibers is hindered by blood-clots and connective-tissue formation. The vessel tubes are very well adapted to uniting small nerves; in this case the ends of the nerves only have to be inserted into the lumen of the vessel. The best suture material for nerves is catgut. Detailed case histories conclude the work.

SCHAACK.

DISEASES AND SURGERY OF THE SKIN, FASCIA, APPENDAGES

Kirschner, M.: Present Status and Prospects of Autoplastic Transplantation of Fascia (Der gegenwärtige Stand und die nächsten Aussichten der autoplastischen freien Fascien-Übertragung). *Beitr. z. klin. Chir.*, 1913, lxxxvi, 5.
By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Fascia transplantation, which has had the most practical success of any of the modern attempts at transplantation, is reviewed critically by the author, who has a large amount of material of his own to report and numerous cases from the literature. The essential point in successful transplantation of fascia is that the transplant should take without any inflammatory reaction. At rest, as well as when in functional activity, the autoplastic transplant shows a tendency to live and become incorporated with the neighboring connective tissue, even if it has been impossible to carry out absolute asepsis.

Some surprising results have been obtained in the covering over of infected cavities. The transplanted fascia undergoes changes, such as swelling and vascularization; it may be transformed into connective-tissue callus or fatty tissue; often, however, it lives in its normal condition. A necessary condition for good results is that the transplantation should be autoplastic, in opposition to the opinion of Rehn, who recommends homoplastic transplantation. Fascia has the advantage over other kinds of material, such as peritoneum and periosteum, that it is easier to obtain and gives greater firmness.

In the special section Kirschner discusses the use of fascia lata to form artificial tendons. He points out the difficulty of securing firmness with the ordinary tendon-suture, the limited possibilities of bridging over a gap by autoplastic transplantation of the tendon of the palmaris longus, and the insecurity of the artificial replacement of a tendon by silk. All these disadvantages are overcome by the use of fascia lata. It can be used in the following various ways:

1. In the form of a cuff to strengthen the suture where broad ends of tendons are brought together.

2. For bridging over a large gap, by being rolled around the stump of the tendon and sutured. In this way a vital union of the fascia is obtained which is not in danger of being torn out unless it is placed under great tension, and so its functional activity can be resumed early. This renders secondary adhesions to the surrounding tissues impossible and insures the motility of the tendon. According

to the cases reported, early motion seems essential, even if there is slight infection. An artificial sheath of fascia may be put around the saphenous vein to insure its moving smoothly.

3. For the correction of paralyses of the facial muscles: (a) In Pagenstecher's operation in ptosis, a strip of fascia is inserted subcutaneously between the occipitofrontalis and the upper lid and by lifting up the lid the normal correction is obtained. (b) To overcome paralysis of the facial nerve, a band of fascia, arched anteriorly so as to include a large extent of tissue, is drawn through the soft parts of the paralyzed angle of the mouth; the two ends are drawn over and under the zygomatic arch and sutured so that the angle of the mouth is held in the desired position.

4. To replace ligaments of joints: (a) In the treatment of flat-foot when it is in the position of pronation, the tuberosity of the navicular bone is fastened to the internal malleolus with a strip of fascia, and in this way the foot is fixed in a position of supination. The author opposes Katzenstein's method of using periosteum in this way. Both methods must, of course, find their justification in the permanent results obtained. Even though the firmness of fascia is seven times as great as that of periosteum, an absolutely permanent fixation is by no means assured. The use of bands of fascia in the treatment of dislocation of the fibula seems feasible. The torn retinaculum of the fibula is sutured and strengthened by a strip of fascia applied over it. In the same way the torn capsule of the knee-joint may be strengthened by superimposed flaps of fascia.

5. Paralysis of the serratus may be corrected by uniting the lower angle of the scapula with the rib below it. The procedure is the same in paralysis of the trapezius. It is not clear, however, what advantage there is in transplanting fascia in a location where functionally active muscle could generally be made use of. There is a special indication for fascia transplantation in Kirschner's method for juvenile muscular dystrophy of the shoulder girdle, because this disease involves several muscles and it is not possible to replace them by functioning muscle.

6. In the treatment of habitual dislocation of the shoulder the author recommends a band of fascia 3/20 cm. long, under the deltoid and over the capsule of the shoulder-joint.

7. For fixation of entire glandular organs, such as the kidney and testicle.

8. To close the cavity of the stomach and intestine and for the treatment of rectal prolapse in the form of Thiersch's ring. A large field for its use is found in the closure of hernias in the region of the umbilicus, the linea alba, and the lateral abdominal wall. In such cases the fascia can be sutured over the gap and bridges it over more advantageously than any other known material. The same thing is true in the inguinal canal when anatomical conditions render Bassini's operation difficult. In femoral hernias Kirschner recommends a long strip of fascia as a tampon behind the hernial sac which has been tied off and between the peritoneum and the femoral fascia, to stop up the hernial canal below the suture.

Large flat flaps of fascia can be used to close up openings in the thorax so that they are air-tight after the removal of large tumors, for instance. The skin is sutured over the fascia. The fascia is resist-

ant to variations in pressure. Fascia flaps may be used to close up defects in the dura. In this location the fascia has the capacity for closing up the dura so as to prevent the escape of cerebrospinal fluid and the entrance of infection, and of preventing secondary prolapse of the brain.

Kirschner reports 46 cases; there was healing by first intention in all cases, and he has exact details in regard to 30 of them. He had excellent results in the use of fascia to replace the dura in fresh traumatic injuries in three cases. Whether the fascia forms adhesions with the pia and the brain is not yet definitely determined, but there are several ways in which it may occasionally be used: As a sheath to surround and strengthen a blood-vessel suture, to strengthen the walls of an aneurism, to strengthen intestinal or urethral sutures, and to close up vesicovaginal fistulæ, to close cavities in mucous membrane, and for interposition in mobilizing ankylosed joints.

Hotz.

MISCELLANEOUS

CLINICAL ENTITIES — TUMORS, ULCERS, ABSCESES, ETC.

Bloodgood, J. C.: Control of Cancer. *J. Am. M. Ass.*, 1913, lxi, 2283. By Surg., Gynec. & Obst.

The number of cures of cancer can be increased by earlier intervention and better surgery. Statistics as to the percentages of cure of the various forms and stages of cancer can be furnished by the records of the great clinics of this country, in which the cases are carefully checked up by pathological examination. The records show that the percentage of cures in the fully developed cancer is relatively small, and is smaller when the diagnosis can be made clinically than when it can be made only histologically. In cancer of the breast, the proportion of cures after five years in cases that can be recognized clinically by retracted nipple or adherent skin is about 25 per cent; of those that can be recognized only by gross appearance, on section, or by the microscope, it is 80 per cent.

In the control of cancer, both the ranks of the profession and the people must be taught the importance of eradicating the disease while it is still clinically benign. The old method of waiting for the signs of cancer simply means decreasing the probability of a cure. Among 820 pathologically fully developed cancers of the skin and visible mucous membranes, Bloodgood was unable to find the absence of a previous defect which might be looked on as a benign precancerous lesion. Of 997 epithelial tumors of the skin and visible mucous membranes, 173 were histologically benign, and there was not a single failure to cure in this latter group. The actual proportion of these lesions has increased from 17 to 39 per cent, in two years.

We have not to-day the figures to prove that the routine and proper removal of these benign so-called precancerous lesions will reduce the number of deaths from cancer, but the recent evidence is suggestive. More operations will be done for the precancerous lesions and in the early stage of cancer that is not yet clinically recognizable, with probability of cure, fewer cases will thus present themselves with inoperable cancer. In internal cancer, it is more difficult to recognize the precancerous lesion, and, until this is done, we cannot hope to increase greatly the percentage of cures.

The author believes that greater uniformity must be established in the treatment of cancer in the different localizations; the diagnosis must be made at the exploration of the tumor, and, in cases of doubt, the complete operation for cancer must be done.

Patients with malignant disease present themselves for aid in the following six groups:

1. Hopeless and inoperable cases, in which there is no hope even for the palliation of the symptoms by any operation.
2. Inoperable and hopeless, in which cases, attempts to relieve pain and prolong life by some operative procedure may be made.
3. Clinically malignant and apparently operable cases, in which at operation the disease is found to have extended beyond possible removal with knife or cautery.

These three groups represent inoperable cancer, and up to the present time have been incurable. The hopeless condition is often due to delay and procrastination by patient and physician, and it is sometimes increased by inadequate intervention at the most favorable time.

The patients with operable malignant disease may be divided into the following groups:

1. Clinically malignant cases, in which clinical symptoms have developed which indicate malignancy as definitely as the microscope.

2. Clinically benign, in which the lesions exhibit none of the symptoms associated with malignancy, the nature of the disease being revealed either at the operation or microscopically.

3. The precancerous lesion, in which undoubtedly the hope for the almost complete eradication of cancer rests on the recognition and complete eradication of the precancerous lesion, whatever it may be.

The final argument in favor of surgical treatment in the precancerous or in the very early malignant stage is that the expense of treatment is, little, either to the hospital or to the patient, and the period of disability is short.

ROBERT H. IVY.

Teuffel, R.: Kraurosis and Cancroid (Kraurosis und Cancroid). *Zentralbl. f. Gynäk.*, 1913, xxxvii, 998.

By *Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.*

The author presents a brief histological description of a case of kraurosis and cancroid in which the inflammatory process of the kraurosis brought about a marked decrease in the amount of carcinomatous tissue and a profuse pearl formation. The author considers this change analogous to that seen after radiotherapeutic treatment.

VASSMER.

Musgrave, W. E., and Sison, A. G.: Acute Malignant Glanders in Man. *Philippine J. Sc.*, 1913, viii, 385.

By *Surg., Gynec. & Obst.*

The authors report two cases and abstract two previously reported cases of glanders in man which ran a rapidly fatal course. The diagnosis was established beyond question of a doubt in all cases. The disease is characterized by a general infection with the *bacillus mallei*. The period of incubation is unknown. The onset is usually sudden with a chill or chilly sensations, with fever and indefinite aching pains similar to those of dengue. The joints rapidly become swollen and painful and go on to suppuration. The lymphatic glands also become swollen and painful, and, in case the patient lives long enough, break down and form open ulcers. The skin lesions, which are quite characteristic, usually begin to make their appearance four to seven days after the onset of the disease. The lesions are, first, simple superficial papules which rapidly enlarge, become vesicles, then pustules, and finally break down to form an open ulcer. That the diagnosis, which is relatively easy to make both clinically and culturally, is frequently not made during life and rarely during the early stages of the disease, the authors attribute to the fact that the disease is so rare that it is not kept in mind as a possibility.

The diseases most often confused with glanders are dengue fever, acute rheumatic fever, and some skin diseases. The first should always be rec-

ognized by its characteristic blood picture. The second is more difficult to distinguish until joint suppuration or the characteristic skin lesions make the diagnosis of glanders clear. The pronounced constitutional symptoms in glanders should always serve to distinguish it from skin diseases. The prognosis in acute malignant glanders is bad and there is no known treatment that influences the course of the disease.

BARNEY BROOKS.

SERA, VACCINES, AND FERMENTS

Ball, C. F.: Abderhalden's Serodiagnosis of Cancer and Pregnancy. *N. Y. M. J.*, 1913, cx, 1249.

By *Surg., Gynec. & Obst.*

Ball presents a review of the literature relating to the diagnosis of pregnancy by the Abderhalden technique with especial emphasis on the possibility of its application to the diagnosis of cancer. While believing that sufficient work has not been done to allow a positive statement, he thinks that "it is at least safe to say that there has been no test previously devised that runs so positive to a known condition of malignancy, with so high a percentage of positive results; further, there is no test that runs so uniformly negative to all other conditions."

A review of the literature on the miostagmin reaction of Ascoli, the Kelling hæmolytic test, and Von Dungern's complement-deviation test shows more favorable percentages in the diagnosis of malignancy with the Abderhalden serum test. To demonstrate the value of the Abderhalden test in diagnosing pregnancy, the author presents "abstracts of over two thousand cases," reported by various observers.

In his own cases, using tissue from a lymphosarcoma involving the retroperitoneal glands with the sera of the patients, the author obtained positive results in three cases known to be malignant, and negative results in two doubtful cases. He reports three cases having a double ferment, reacting positively with both placental and tumor tissue, two parturients and one, a male, with papilloma of the bladder. Seven pregnant cases reacted positively with placental tissue, negatively with the malignant tissue. With the exceptions noted above, all the malignant cases gave a negative reaction with placental tissue.

He suggests the possibility of being able to differentiate the kind of tissues involved by obtaining reactions with the proteids from different forms of malignancy. Using a sarcoma proteid he obtained reactions differing from those obtained with a proteid prepared from an epithelioma of the cervix. With the latter, "pregnant conditions would apparently give the malignancy reaction in cases known not to be malignant, probably because of the ability of the pregnant ferment to digest uterine tissue as well as placental tissue."

He emphasizes "(1) the desirability of always working with at least two kinds of tissue, one of these necessarily to be carefully prepared placenta;

(2) the necessity of designating the kind of material used in all experimental work when other than placental tissue is used; (3) the advisability of associating this test with experimental tumor transplantations in animals; and (4) further experimental work directed toward eliminating, if possible, all sources of error in the present technique."

D. H. BOYD.

Pearce, R. M.: The Scientific Basis for Vaccine Therapy. *J. Am. M. Ass.*, 1913, lxi, 2115.

By Surg., Gynec. & Obst.

Pearce gives a very generalized argument for the placing of prophylactic vaccination for infectious diseases on a scientific basis. He argues in a similar fashion that, although curative vaccination has no sound scientific basis, the general principles of immunity and clinical observation offer a plausible explanation for the treatment of chronic infections and "carriers." He shows that the curative vaccination has no basis in the acute self-limited diseases and is purely experimental, and that the only proper method of vaccination is with the autogenous variety of vaccines."

To place therapeutic vaccination on a scientific basis it is necessary to study the individual and his infection, and the author suggests that it would be well for the clinical worker with vaccines to remember the assertion of Wright that the man to check off the clinician and aid him in his investigation "should be a man who has spent years of study in mastering the technique and learning how to make the vaccines, where to look for the microbes, how to isolate them, and, most of all, he should be a man with sufficient experience and ability to apply all these things."

DONALD GORDON.

BLOOD

Gózony, L.: The Serologic Difference Between Maternal and Foetal Blood-Serum (Über serologische Unterschiede zwischen mütterlichem und fötalem Blutserum). *Ztschr. f. Immunitätsforsch.*, 1913, xix, 172.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In common with Sachs, Ryrosch, Kopf, and others, Gózony found that the foetal serum of the guinea pig did not contain either a hæmolytic or a bactericidal complement. In foetal rabbit and pig sera the hæmolytic complement was lacking, but these sera showed almost as much bactericidal strength as the maternal serum. This shows that in rabbit serum different substances cause hæmolysis and destruction of bacteria.

HAMM.

Voegtlin, C., and Macht, D. I.: Isolation of a New Vasoconstrictor Substance from the Blood and the Adrenal Cortex; Presence of the Substance in the Blood and Its Action on the Cardiovascular Apparatus. *J. Am. M. Ass.*, 1913, lxi, 2136.

By Surg., Gynec. & Obst.

The authors have isolated a new vasoconstrictor substance from the blood. The work was suggested

by some investigations on dehepatized dogs, some years ago, where the Ecker's fistula had been used to exclude the liver. Dogs so treated manifested a train of symptoms resembling those of poisoning by the digitalis-like bodies; i. e., high blood-pressure, marked cardiac stimulation, and final stoppage of the heart in systole.

From defibrinated human, ox, and pig blood and serum, they isolated, by a process of their own, a white crystalline substance. This substance is sparingly soluble in water, freely soluble in chloroform and acetone, hot ethyl alcohol, and other organic solvents.

The study of the action of this substance on the blood-vessels and hearts of warm and cold-blooded animals showed that 1/300 mg. produced a marked effect of constriction of the vessels of the frog's hind legs, by Trendelenburg's method; and of the rabbit's ear by the method of Pissensski. Small quantities acted on the hearts of the frog, terrapin, and toad in a manner similar to the digitalis bodies; there was first marked increase in force and contraction of the ventricle with increase of tone and volume output of heart muscle. Strong solutions produced irregularity of the beat, marked slowing and tendency to systolic standstill, with decreased volume output during this period. This effect was more apparent in injured hearts or those known to be in poor condition at the beginning of the experiment.

It was found that the quantity of extract corresponding to one ccm. of human blood, when diluted with 500 ccm. of Locke's solution was sufficient to produce a very marked constriction of the rabbit's blood-vessels.

The substance was also isolated from blood plasma and red cells. The recent studies of O'Connor, Stewart, Zucker, and others have shown conclusively that systemic blood, with the exception of blood from the renal vein, does not contain epinephrin, and other constrictor substances in the blood have been suggested.

The authors conclude, after a study of its physical, chemical, and physiological properties, that it is a substance with different pharmacological properties than that of epinephrin.

The method of preparation definitely excludes its being epinephrin. A sufficient quantity has not been isolated by them to make a complete chemical analysis. The physical and chemical properties so far determined for the body seem to point to its relation to cholesterin on one hand and cortex of adrenal on the other.

A study of adrenal cortex extract was made and its pharmacological action was identical, in so far as it was studied, with the crystalline body described as having been isolated from blood and sera. As none of the physiological properties of the substance were changed by boiling with weak alkalies, the possibility of it being epinephrin was positively excluded, the latter being a product of the suprarenal gland. The work is of especial interest, as the func-

tion of the adrenal cortex has been a mystery so far.

DONALD GORDON.

Le Calvé, J.: Changes in the Blood after Constriction of a Limb (Des modifications du sang après constriction d'un membre). *J. de Physiol. et de Pathol. gén.*, 1913, xv, 1027.

By Journal de Chirurgie.

Le Calvé has done experimental work on the rabbit, and has studied the changes in the blood after constriction of a limb or part of a limb in the human subject as well.

He chose a region rich in nerve fibers, where veins and lymphatics were abundant and where the blood channels were sufficiently deeply buried in the muscular masses so that they were not compressed by the ligature and permitted the access of blood. All these conditions were present in the calf; the ligature was placed a little above the protuberance of the gastrocnemii. It should be tied tight enough so that the subject feels engorgement and tingling, but not too tight, for the pulsation in the foot vessels should not be cut off. The blood is taken from the arm, under the usual conditions, both before and after the application of the ligature.

This constriction of the calf, taken as an example, produces local and general effects. The local effects are insignificant: a little oedema and a little turgescence of the vessels of the region, which assumes a rosy or even a slightly cyanotic color. The general effects on the blood and on the circulation are very interesting. The blood is dehydrated and becomes so concentrated that it will hardly flow through the needle. This property is particularly marked after a half-hour of constriction. Ten minutes after the ligature is removed the blood flows freely through the needle again. As a result of the dehydration, which comes from a transudation of a part of the serum into the interstitial spaces, the pressure is lowered; but rises again abruptly even to above the normal after the experiment. Dehydration is proved by the fact that the albumin increases very much under the influence of the ligature. The chlorides, however, pass with the water into the interstitial spaces, so that the chloride content of the blood is decreased, which is a fact of great importance. As soon as the ligature is removed the chlorides pass into the blood again.

These experimental facts can be applied to human pathology. As the constriction conduces to coagulation of the blood, it may be used as a means of combating hæmorrhage.

The removal of the ligature causes the substances in the interstitial spaces to flow back into the blood current; therefore bleeding with the object of relieving intoxication should be performed after its removal. As constriction of a limb decreases pressure it is of service in cardiac cases.

The decrease and increase in the chlorides on application and removal of the ligature explain the good results obtained in cases of Bright's disease.

PIERRE CRUET.

Ottenberg, R., and Kaliski, D. J.: Accidents in Transfusion; Their Prevention by Preliminary Blood Examination, Based on an Experience of One Hundred Twenty-Eight Transfusions. *J. Am. M. Ass.*, 1913, lxi, 2138.

By Surg., Gynec. & Obst.

The authors insist that accidents in transfusion due to the occurrence of hæmolytic or agglutination of the donor's blood by the patient's serum, or vice versa, can be absolutely excluded by careful preliminary blood tests. They have encountered 17 cases whose blood was actively hæmolytic for several different donors. Non-hæmolytic donors were eventually found in all but two; in these, hæmolytic transfusions were tried, and in one, a severe, but not fatal, hæmaturia resulted. The other case died apparently from a phagocytosis of red cells by leucocytes in the circulating blood. They encountered three cases of reversed hæmolytic; that is, hæmolytic of patients' cells by donors' serum. They found three transfusions in which the serum of the patient was agglutinative to the cells of the donor; two were fatal with phagocytosis of red cells, and one had severe hæmaturia. Over 30 control observations on non-agglutinative and non-hæmolytic transfusions failed to show any phagocytosis. The authors have seen four transfusions in which the serum of the donor was agglutinative to the cells of the patient without untoward effects. Febrile reactions occurred in about 10 per cent of the transfusions, likewise urticaria and other skin eruptions, irrespective of hæmolytic or agglutination.

TORR W. HARMER.

BLOOD AND LYMPH VESSELS

Von Heuss, R.: Ambulatory Treatment of Varicose Veins and Ulcers of the Leg, with Adhesive Plaster Bandages (Die ambulante Behandlung des varikösen Symptomenkomplexes, insbesondere des Unterschenkelgeschwürs mit der Klebbrinde). *München. med. Wchnschr.*, 1913, lx, 2172.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Von Heuss has tested the treatment of varicose veins, dermatoses, and ulcerations of the leg with adhesive bandages on 350 cases for a number of years and recommends it very warmly. The effect of the bandage is due to continuous methodical pressure and also to the therapeutic action of the adhesive material. The bandage material is elastic; the adhesive matter does not irritate the skin, even when it is left on for long periods of time. If there is much secretion from the surface of the ulcers, the bandage can be left in position; it does not even need to be taken off for warm baths, etc., and is therefore very economical. The active medicinal component of the adhesive material is a combination of lead in the form of litharge. As a result of the treatment, oedema and varices disappear, dermatoses heal, all sorts of ulcers, even indolent ulcers with indurated edges, are covered over with skin more or less quickly. The treatment is ambulatory; the

patients can be out of bed, and with care can go about their work. The results depend on a careful carrying out of the directions given in the article.

DE AHNA.

Burdenko, N.: Ligation of the Portal Vein (Zur Frage der Unterbindung der Vena portæ). *Deutsche Ztschr. f. Chir.*, 1913, cxxiv, 95.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Three times in the course of the last five years the author has had the opportunity of observing the physiology of the portal vein in the human subject: First, in a case of gunshot injury of the liver the portal vein was compressed for only a short time during the operation. A severe reaction took place; the pulse immediately became thread-like, the pupils dilated, and death took place after eighteen hours. Second, in a case of extirpation of the kidney the inferior vena cava was severed. As an immediate union of the ends of the vessel was not possible, the cava was sewed into the portal vein and the latter compressed for half an hour. The pulse became weak, rose to 120, and then so high that it could not be counted, the pupils dilated, and the respiration was rapid. The intestine and all the other organs in the region of the root of the portal vein were very much congested, and the spleen was distended. Death resulted after six hours. Third, in the case of a young man who had been sick for years it was decided that the swollen intra-abdominal lymph-glands were the cause of the ascites and they were removed. They were found to be firmly adherent to the portal vein, and the vessel wall was torn in such a way that suture was impossible. As the collateral circulation was well developed the vessel was ligated and the patient recovered.

Experimental work by physiologists has shown that the portal vein can be ligated without danger to the life of the animal if there has previously been a series of firm artificial adhesions established between the omentum and intestines and the abdominal wall. The author experimented with six animals, completely closing the portal vein not less than eight days after the preceding operation, and found that the animals died after fifteen minutes, at the most. He believes that the nervous system plays a predominant part in the production of the effect of ligation of the portal vein, and particularly a paralysis of the peripheral ganglia. He concludes, from his experiments, that a compression of the hepatoduodenal ligament and the portal vein, for a greater or less time, shows technical and anatomical results that correspond to the teachings of physiology.

COLLEY.

Oliver, J.: The Relation of Hodgkin's Disease to Lymphosarcoma and Endothelioma. *J. Med. Research*, 1913, xxix, 209. By Surg., Gynec. & Obst.

In this article the author again raises the question as to the nature of Hodgkin's disease, whether it is a granulomatous or neoplastic process. He believes that a comparison of Hodgkin's disease with the two universally admitted neoplastic affections of

the lymph-glands will throw some light on the nature of the former condition, and in this article he describes in detail the two affections, lymphosarcoma and endothelioma, of whose neoplastic nature he believes there can be no doubt, and compares these findings with those of Hodgkin's disease.

He attempts to show that all constitute a series of neoplastic processes of the lymphatic glands which differ not so much qualitatively as quantitatively. The material at his disposal was that collected in the Pathological Laboratory of Cooper Medical College and the Leland Stanford Junior University during the past 15 years, and consisted of 22 cases of lymphosarcoma, 11 cases of Hodgkin's disease, and 13 endotheliomata.

He first describes the histological processes presented by the various diseases and reports in detail the findings in 7 cases of lymphosarcoma, 9 cases of endothelioma, and 5 cases of Hodgkin's disease. A few striking points of similarity he calls particular attention to in reviewing the facts. First, that although not so regular in appearance the presence of eosinophiles and giant endothelial cells is found in the majority of the frankly neoplastic sarcoma; this fact he believes to be of more than casual significance. A still more striking appearance which he found is that of fibrous connective-tissue formation, not only in advance of the invading process but in the substance of the tumor mass itself. As he states, the formation of fibrous connective tissue has been one of the main arguments for the granulomatous-inflammatory theory of Hodgkin's disease, and its occurrence in lymphosarcoma has been denied by many writers.

In the author's present series, fibrous connective-tissue formation and the related occurrence of plasma cells is evident in all the specimens, though it is not so marked in the more malignant cases. He concludes his study as follows:

1. Hodgkin's disease must be classed with the lymphosarcomata and endotheliomata of the lymph-glands as a neoplastic process. The following facts compel this conclusion:

- (a) The similarity and, in cases, identity of the histological process.
- (b) The early and constant development of malignancy (invasion of capsule and veins).
- (c) The ultimate formation of true metastases, partly, at least, by the blood stream.

2. The endotheliomata of the lymph-glands are of relatively frequent occurrence and may be classed as endothelioma medullare, endothelioma scirrhum and endothelioma cylindricum (Winogradow), or better by the classification of Ewing as diffuse, alveolar, and perivascular.

GEORGE E. BEILBY.

POISONS

Churchman, J. W.: Cutaneous Manifestations of Septicæmia. *Am. J. M. Sc.*, 1913, cxlvi, 833.

By Surg., Gynec. & Obst.

The author discusses the predilection of some infections for some special parts of the body and the

comparative immunity of other parts from them, pointing out that we must look for some other explanation than a "rich or poor blood supply." Recent observations with aniline dyes have shown very sensitive selective actions and have suggested that chemotropism may play a part in these processes.

The following case is reported: A Pole, 59 years of age, had sustained a ragged lacerated scalp wound one week before admission to the hospital. The wound had been sutured by a physician, following which the patient went on a week's drunk and when sent to the hospital had a temperature of 102.5°. The edges of the wound were found to be separated by necrotic tissue and the skull which could be explored by the finger was not fractured. Resonance on the right side of the back and axilla was impaired and coarse musical râles were heard throughout the right side.

The temperature ranged around 102°, a delirium soon developed, and consolidation of the whole right lung was soon apparent. Cutaneous lesions, which were blebs upon hyperæmic bases and filled with a clear fluid which soon became hæmorrhagic, quickly developed upon the hands and feet. They were intracutaneous; one on a little finger looked as if a finger-cot had been drawn over the finger, with a sharp line of demarcation between the bleb and normal skin.

The patient died of a streptococcic septicæmia with double pneumonia, seventy-two hours after admission; the organisms were isolated in pure culture from the blood and from the fluid of the blebs.

The author further differentiates the lesions of a septicæmia from the erythematous lesions, the popular rashes, the urticarious, the hæmorrhagic group, the vesicles, pustules, and pemphigoid emphons and herpes.

H. A. POTTS.

SURGICAL THERAPEUTICS

Barker, L. F., and Gibbs, J. H.: On the Treatment of Leukæmia with Benzol. *Bull. Johns Hopkins Hosp.*, 1913, xxiv, 363.

By Surg., Gynec. & Obst.

In July, 1912, Von Koranyi reported the first case of splenomyelogenous leukæmia in the treatment of which benzol was used. He states that he was led to the institution of this therapy through the pharmacological effects of the chemical as illustrated in Selling's experiments, i. e., an inhibition of the white-blood-corpuse-forming organs and a neutral effect or a stimulant action upon the production of red blood-cells and hæmoglobin.

From his experience with the drug, Von Koranyi formulated the following conclusions:

1. Benzol first tends to increase the white blood-cells, but shortly leads to an improvement in the leukæmic condition. The fall in the white blood count usually begins at the end of the second week or at the beginning of the third week of therapy, the decrease at first being slow and then quite rapid.

The general condition of the patient is improved just as with X-rays and other forms of treatment.

2. Benzol acts more slowly than X-rays, but some patients improve under its administration who do not respond to the usual therapy. Previous or concomitant applications of the X-ray seem to hasten the action of the new drug.

3. The drug can be safely given in doses of 4 gm. daily, and its administration with equal parts of olive oil seems to lessen the tendency to produce unpleasant symptoms, such as heartburn, eructations, and vertigo.

4. Benzol seems to be efficacious in the treatment of polycythæmia with splenic enlargement, one case showing a fall in red blood-cells from 9,000,000 to 6,700,000, after three weeks of treatment.

The rapid accumulation of new data on this subject has tended to confirm in almost every detail Von Koranyi's original statements. Billings, of Chicago, has recently reported five cases in which he used benzol; four of his patients suffered from myelogenous leukæmia, one of them from lymphatic leukæmia. He notes essentially the same changes as reported by Von Koranyi, but draws attention to the entire disappearance of myelocytes from the blood in one of his patients, whose white count had been reduced from 191,000 to 3,600. Barker and Gibbs report a case of splenomyelogenous leukæmia in a white male 57 years old, that responded in the usual manner to benzol therapy. The symptoms which he considered as due to the splenomyelogenous leukæmia began approximately two months before his entrance to the hospital. They consisted of extreme nervousness, anorexia, insomnia, and marked depression with feelings of general inefficiency. The physical examination was entirely negative. The blood picture showed:

Red blood-cells	3,672,000
White blood-cells	345,000
Hb (Sahli)	65%

Benzol was administered beginning with 2 gm. daily, the dose being increased 1 gm. each day until it had reached 5 gm., and was continued in that quantity for about ten weeks. Five days after the treatment was started the white blood-cells rose to 210,000; then they began to fall and after twelve weeks the white count had fallen to 10,200. Approximately seven weeks after the benzol treatment was discontinued his blood count was as follows:

Red blood-cells	4,096,000
White blood-cells	6,800
Hb (Sahli)	76%

GEORGE E. BEILBY.

Braunstein, A.: Chemotherapeutic Treatment of Cancer with Selenium and Iodomethylene Blue (Chemotherapeutische Versuche an Krebskranken mittels Selenjodmethylenblau). *Berl. klin. Wchschr.*, 1913, l, 1102.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author reports favorable results in the treatment of cancer with intravenous injections of

colloidal selenium and the administration, at the same time, by mouth or rectum, of iodomethylene blue. The selenium made by the clinic of Paris was used, because of its property of increasing autolysis. Following the experiments of Wassermann-Keysser and Werner-Szecei, the author wished to combine it with a non-toxic, easily diffusible substance and selected methylene blue, which had been proved by Ehrlich to fulfill both of these conditions. As iodine has an affinity for cancer-cells, he combined this also and at first gave a mixture of methylene blue 0.1+ iodalbin 0.36 in capsules twice a day, but later used the copper iodomethylene blue of Gr. v. Linden. He treated 13 carcinomata and 5 sarcomata. Among all these he observed only partial and in some cases temporary results, but he accounts for this by the fact that they were all inoperable and far advanced.

In early cases the author believes he can get better results and he recommends the method as a preventive treatment to avoid recurrence after operations. The results obtained were a decrease or disappearance of pain, improvement of the general condition, and in many cases an increase in weight. The tumors became smaller, more movable, and the lymph-glands decreased in size. SZECEI.

ELECTROLOGY

Lange, S.: The Accuracy of the X-Ray Heart Shadow. *Lancet-Clin.*, 1913, cx, 588.

By Surg., Gynec. & Obst.

This paper is devoted largely to the comparative value of röntgen examination and the usual physical methods used in determining heart outlines, and contains a résumé of the more important studies made to date by various authors along this line. As a guide to the interpretation of röntgen and physical examinations, the author recommends the perusal of the schematic figure of the mediastinum evolved by Weinberger, which gives a good mental figure of the X-ray heart silhouette. For routine work, röntgenograms, made at a distance of thirty inches suffice, but greater accuracy, as regards actual heart dimensions, can be obtained by the orthodiagraphical method, devised by Moritz, or teleröntgenography; introduced by Kohler of Wiesbaden.

The absolute value of and accuracy of the X-ray heart silhouette is discussed under three headings as follows: (1) Is the X-ray silhouette an accurate representation of the heart and mediastinum? (2) How do the X-ray findings compare in accuracy with the usual physical methods? (3) Have we a standard normal heart silhouette upon which we can base our interpretations, and with which we can make our comparisons?

Regarding the first, the X-ray silhouette gives simply the contours of the heart and mediastinum without taking into account its thickness and the obliquity of its position. The surface area of the röntgenogram is not the surface area of a frontal

section of the heart. The shadow of its base merges into that of the great vessels, and its apex is obscured by the left lobe of the liver. Its size and shape are influenced also by respiration, position of patient, and other factors. However, all criticisms of the röntgen method for determining outline apply in even greater degree to the other methods used.

As regards the second point, it has been definitely shown that the X-ray findings are far more accurate than those obtained by palpation and percussion. This is especially true for the apex, left border, and region near the base of the heart. The author gives the results of Dietlen's and Weber and Allendorf's investigations in proof of this. The percentage of error is less in children and young adults; it is increased in abnormal conditions of the heart itself and also where obesity or pulmonary emphysema are present. These factors have practically no bearing on the outline as determined by the röntgen ray, hence the greater accuracy under these conditions.

The third point as to what constitutes a normal heart silhouette has not as yet been determined. Wide variations have been found in perfectly normal individuals under approximately the same conditions. Sex, body height, occupation, and, especially, age and body weight have been found to have a marked influence on the size and shape. The tables prepared by Dietlen and Groedel of normal heart dimensions for individuals of different age and weight, do not take into consideration all the factors causing variations—notably not the position which the heart occupies—and therefore cannot serve as an absolute basis for comparison. Although far from perfect, the röntgen method for ascertaining size and shape is certainly in advance of the usual physical methods, and has been the means of obtaining much information regarding the action of respiration, exercise, medication, and other influencing factors upon the heart.

ADOLPH HARTUNG.

Goby, P.: Microradiography. *Arch. Röntg. Ray*, 1913, xviii, 247.

By Surg., Gynec. & Obst.

The author believes that microradiography, i. e., radiographical examination of microscopical objects, is destined to render the greatest service to natural science. It is of great value in the study of opaque objects which can be examined under the microscope only in thin sections, which necessarily destroys the specimen.

In geology, by this method, many new species were discovered from a tiny pinch of foraminiferous sand. In conchology, the different phases of growth and development of the shell; in embryology, differentiation of tissues can be studied easily; in comparative anatomy, the development of the bones of the smallest animals, their osseous structure, the skin, flesh, and muscles can be studied; and in botany, the student is enabled to differentiate organs and tissues opaque to the ordinary light. These radiographs can be enlarged 15 to 45 diam-

eters, or can be studied directly under the microscope by transmitted light. For the description of the apparatus, which is somewhat technical, the reader is referred to the original paper.

The object is placed in immediate contact with the film side of the plate, no black paper being used. This must be done with the aid of a red darkroom light only, the construction of the apparatus itself protecting the plate against the ordinary light when everything is adjusted. The plates must have a very fine grain.

The coil used to produce the rays need not exceed one of 6-inch spark length. A small rheostat is necessary to vary the current. The tube should be one giving a one-quarter to one-inch spark, varying with the degree of transparency of the object, the longer spark being necessary for the more opaque objects. The degree of hardness must remain the same during the exposure. The author uses a Villard osmo-regulator to prevent variation in the spark gap. The time of exposure is 30 seconds to 5 minutes.

LEOPOLD JACHES.

Weitzel, F.: Experience with Intensive Röntgentherapy (Erfahrungen mit der Röntgen-Tiefentherapie). *Strahlentherapie*, 1913, iii, 272.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Weitzel reports the results of röntgenization performed from October, 1912, till May, 1913. The technique was: Field irradiation of the abdomen through 8 windows; hardness of tubes, 7 to 9 Benoist; secondary pressure 4 to 5 ma.; distance from focus to skin 18 cm.; aluminum screens 3 mm. thick — doses measured with Kienboeck's dosimeter. Irradiation was continued on two succeeding days through 4 windows each. Application of one erythema dose each (5 to 7 min. duration); on an average 5 to 600 Kienboeck X were given in 7 series. Dessauer's reform apparatus was used with Müller and Veifa's water-cooled tubes.

Among 64 patients the treatment was finished in 21 patients with myoma, 5 patients with metropathies, and two with dysmenorrhœa. In most cases amenorrhœa or oligomenorrhœa was effected, and also in some cases decrease in the size of the tumor; dysmenorrhœa was especially favorably influenced in young women. Secondary symptoms appeared only in slight degree. In one patient with myoma, abortion was effected unintentionally. The author believes that pedunculated tumors and subserous and submucous ones should be operated on and thinks that severe hæmorrhages are not a contra-indication to irradiation. Exploratory curettage is advocated, in cases with irregular hæmorrhages, as a preparatory treatment before röntgenization.

DORN.

Gibson, J. D.: X-Ray in the Treatment of Tuberculosis. *Hahnemann. Month.*, 1913, xlviii, 889.

By Surg., Gynec. & Obst.

The author opens his subject with a short discussion of all the methods, other than X-ray, which are commonly employed in the treatment of pul-

monary tuberculosis. He describes the X-ray as intensified sunlight which has a range of ether vibration of five and one-half octaves, thus possessing much greater efficiency as a curative agent than sunlight.

The basis of his technique is the fact that the X-ray will penetrate and disintegrate even an old tubercle and kill outright or greatly attenuate the virility of its contained bacilli and simultaneously cause a hyperæmia of the more normal adjacent tissues. The blood and lymph streams receive these dead and dying bacilli with the other products of tubercle disintegrations as toxins.

Phagocytosis results and antibodies and autogenous vaccines are produced, provided the dosage of X-ray is sufficient to keep the opsonic index in the positive phase.

He describes the proper ray as one which will, with a tube-skin distance of from fourteen to eighteen inches, a current of from one to two milliamperes in the secondary circuit, produce on a photographic plate a skiagraph of an ordinary tuberculosis lung in from one to two minutes.

His exposures average 10 minutes each and are alternated, 3 times weekly, with the brush discharge from a static machine applied over the upper spine, shoulders, and sites of pleuritic lesions until pain is relieved or the hands are moist.

He emphasizes the importance of X-ray treatment in incipient cases, in which the mediastinal and bronchial glands are alone involved or in which apical involvement is just beginning, but suggests the use of vaccine injections in these cases, since the *in situ* production is much less abundant on account of the limited tissue involvement.

He summarizes the effects of X-ray treatment in pulmonary tuberculosis of the lungs thus: A hyperæmia of the lungs is produced, the number of râles is temporarily increased, the sputum is liquefied, the temperature is reduced, pleuritic pain and muscular soreness are relieved, the pulse rate is lowered, digestion is improved, and a gain in weight is noted. Shortness of breath is increased in advanced cases, due either to toxin absorption or pulmonary congestion. During the third month, in advanced cases, the sputum contains white flecks mixed with yellow, the white gradually superseding the yellow. The râles begin to disappear, in ordinary cases, during the third month and the lungs clear by the end of the fourth.

The X-ray has less effect on incipient cases than on second and third stage cases, presumably on account of the lesser production of autogenous vaccine *in situ*. All cases which will react to the toxic effects of the liberated tubercle products will show improvement and many are cured.

During the course of his discussion the author remarks that the X-ray may cause the production in the tuberculous tissues of an element, yet unknown, the lack of which prevents the complete success of the vaccine and serum treatment of disease.

FRANCES C. TURLEY.

Haendly, P.: Anatomical Findings in Carcinomata, Treated with Mesothorium and Röntgen Rays (Anatomische Befunde bei mit Mesothorium und Röntgenstrahlen behandelten Carcinomen). *Arch. f. Gynäk.*, 1913, c, 49
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Bumm and the author made a series of excisions for microscopical examination and found to an increasing degree as the length of the treatment increased, decrease in the size of the carcinoma, destruction of carcinoma cells, sclerosis of the connective tissue, and changes in the vessels. They report the microscopical picture in five cases that had been treated by deep irradiation. Three of the specimens were obtained by operation, two post-mortem. The microscopical findings were as follows:

In the cases irradiated before operation there were superficial necrosis and marked changes in the carcinoma cells, but the action had not been uniform, as cells in the process of disintegration lay side by side with living and active ones. There was no effect on the hypogastric glands. The post-mortem specimens had been more thoroughly irradiated; but in spite of that there were still cell-nests in the walls of the cavities. These cells were not active, but the surrounding tissue was so severely injured that judgment cannot be passed on the effects of deep irradiation.

Haendly comes to the conclusion that deep irradiation is not uniform and not sufficient to thoroughly destroy deep-seated carcinomata; by extreme filtration it may be possible to accomplish this without injuring the healthy tissue.

HEIMANN.

Ranzi, E., Schüller, H., and Sparmann, R.: Radium Treatment of Malignant Tumors (Erfahrungen über Radiumbehandlung der malignen Tumoren). *Wien. klin. Wchnschr.*, 1913, xxvi, 1651.
By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The authors worked first for four years with 10 mg. radium bromide, but for the past seven months with 225 mg. radium, 150 mg. mesothorium, and partly with rademanit, representing 150 mg. radium. They used increasing doses and thorough filtration with lead, gold, silver, and platinum filters 0.5 to 2 mm. thick, and secondary filtration through rubber and gutta percha. The maximum dose is 22,000 milligram-hours. The radium was sometimes laid upon the tumor, sometimes buried in it, generally near the periphery; large tumors were previously reduced as much as possible. Only inoperable tumors were treated that had been demonstrated histologically to be malignant. There were 53 cases all together.

The first group included six cases that had had apparently radical operations performed upon them. They were treated palliatively, but there were three extensive recurrences within a short time. Relatively small doses were given on account of the danger of burning.

The second group included 47 cases which had not been operated on and which were treated therapeutically. Ten of them withdrew prematurely from the treatment; one of them, a case of skin carcinoma of the hand, subsequently had an amputation performed. Of the remaining 36, seven soon showed that they were not being benefited, one a case of carcinoma of the breast that was taking 10,752 milligram-hours of radium; six died during the treatment—one, a case of spindle-celled sarcoma of the pleura, receiving 12,380 milligram-hours of radium, died, after the tenth treatment, of bleeding from erosions and mediastinitis. In six cases, in spite of the use of large doses of radium and mesothorium, only a slight local effect was observed, or with a favorable local effect, a marked change for the worse in the general condition. In three cases, the tumors showed a decided growth while under treatment; in three cases, carcinomatous nodules disappeared under radium treatment, a recurrent tumor of the tongue, a basal-celled carcinoma of the skin of the nose, and a tumor of the tongue in which glandular metastases were afterward extirpated. The doses in these cases were 99, 324, and 1680 milligram-hours.

In eleven cases, in which the treatment is not yet finished, a markedly favorable effect of the radium rays has been observed, although the time is yet too short for a decisive judgment. An elective effect of the radium on the tumor-cells has not been observed. They are destroyed sooner because, being degenerated cells, they succumb more quickly to any form of trauma. Epithelium is more sensitive than connective tissue; there were burns of the mucous membrane of the mouth on irradiation from outside.

In deep-seated tumors the dangers and injuries of radium treatment from destruction of tissue cannot be controlled with any degree of certainty, therefore these tumors should always be radically removed. There is danger of perforation in irradiating internal organs, and danger of hæmorrhage, this occurring once from the carotid, which was shown on histological examination to be free from tumor. Sometimes large doses seem to stimulate the development of carcinoma, and probably in irradiation from the center the radium has a stimulating effect on the periphery, because of being weakened by distance. Intensive irradiation always leads to marked disturbance of the general condition, such as loss of appetite, dullness, and headache. Irradiation on the neck always caused vomiting. The wound secretion of irradiated tumors caused radium burns on the skin which had not been irradiated directly, and also superficial necrosis of the epidermis. The results of the treatment thus far are very unsatisfactory; in the three cases out of the 53 where the tumor disappeared, the time is yet too short to be sure of permanent recovery. In inoperable tumors (11 out of 36) radium may cause a decided improvement. The authors believe that radium has a certain value as an auxiliary means of

avoiding recurrence in post-operative treatment, but they do not think the radium treatment of operable tumors is justified. The use of an agent that has only a local effect in treating operable carcinoma controverts well-founded scientific principles in the treatment of malignant tumors.

MAGENAU.

Latzko, W., and Schüller, H.: Radium Treatment of Cancer (Zur Radiumbehandlung des Krebses). *Wien. klin. Wchnschr.*, 1913, xxvi, 1541.
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author gives a description of seven cases of malignant tumors of the genital organs which were treated with radium. Generally only small doses were used, 20 to 60 mg. radium. In three cases there was no noticeable effect on the size of the tumor. There was almost always an improvement in the general condition. In a case of carcinoma of the ovary, as large as a man's fist the tumor decreased tremendously in a relatively short time.

The author made a series of excisions for examination after the radium treatments and confirmed the microscopical findings of other authors as follows: (1) Inflammation and necrosis of the surface; (2) degeneration of the tumor cells, going as far as complete absorption; (3) increase in the connective tissue and changes in the vessels. Up to a certain point the radium acts as a stimulant; above that, as a poison to all cells.

Operable cases should be treated without operation only when the special circumstances of the case make the probability of operative mortality so high that the danger of delaying the operation by radium treatment seems less. In inoperable cases radium treatment can effect improvements hitherto undreamed of, and according to reliable reports from the literature, bordering on complete recovery. To attain such results, as large doses as possible must be used for as long a time as possible.

HIRSCH.

Sticker, A.: Radium and Mesothorium Treatment; Their Theoretical Principles and Practical Use in Treatment (Radium- und Mesothoriumbestrahlung. Ihre theoretischen Grundlagen und ihre praktische Anwendung in der Heilkunde). *Strahlentherapie*, 1913, iii, 1.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The γ -rays, as has often been said, can be compared directly with röntgen rays. They are distinguished from them by being 40 times as hard, by variations in their capacity for ionization and by the kind of secondary rays they form. From the fact that the röntgen rays can be produced at the

anticathode by cathodal rays, and that the γ -rays always appear in association with β -rays, we may probably conclude that the γ -rays also owe their origin to the β -rays. This, however, has not been proven experimentally.

Weak irradiation causes only partial injury to the tissues, but this may lead to a progressive disturbance in metabolism, which may eventually end in the death of the cell. If the cell does not die, it at least becomes sick, as is manifested by the weakening in its power of regeneration. Radium and röntgen ulcers heal slowly, the first evidence of injury in the skin being hyperæmia, which appears early or late according to the strength of the irradiation. But even if no erythema appears, processes may be taking place in the cells of the vessels that only become manifest after weeks or even months. The endothelial cells of the vessels are only slightly differentiated, are embryonic in character, and are more sensitive than the skin. Sparing the skin in deep irradiation by filtering the rays does not insure that the much dreaded late reaction will not take place because of injury to the vessels.

Only a few observations have been published in regard to the absorptive capacity of individual tissues, but it is certain that pathological tissues absorb the radium and mesothorium rays more than normal ones do. This gives rise to the so-called elective effect of the rays, which, as a matter of fact, does not exist. The effect extends to the normal tissues also. Pathological tissues may become necrosed or may be replaced by connective tissue by a process of chronic interstitial inflammation. Pathological as well as normal tissues show different degrees of sensitiveness to the rays. Leukæmic tissue and warts are the two extremes; carcinomatous tissue is moderately sensitive, and myomatous tissue very slightly so. The effect of the rays is always due to a primary injury to the cells, but sound tissues are able to protect themselves by forming new cells to replace the ones destroyed, while pathological tissues cannot replace themselves.

The aim of radiotherapy must be primary cell death; this can only be attained by strong preparations, and radium and mesothorium preparations fulfill this requirement. Both are suitable for treatment if used in sufficient quantities; they must have an activity that corresponds to that of 50 mg. pure radium bromide. The dosage is generally measured in milligram hours; for treatment of a carcinoma of the rectum a dose of 14,000 milligram hours is necessary. The dose is increased when strong filters are used, so that only the γ -rays are available. In very intensive irradiation severe disturbances of the general health may occur.

DENKS.

GYNECOLOGY

UTERUS

Engström, O.: Malignant Chorio-Epithelioma (Beobachtungen über Chorionepitheliom). *Mitt. a. d. gynäk. Klin.*, 1913, x, 175.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author gives detailed histories of five cases of malignant chorio-epithelioma from his clinic.

The first case was a typical metastatic chorio-epithelioma in the vagina with no tumor in the uterus or either of the tubes. Extirpation was performed in apparently normal tissue, but there was prompt recurrence. In the two following months the operation was repeated twice; death resulted four and three-quarters months after the first operation. The tumor in the vagina may be regarded as a metastasis from a neoplasm that developed primarily in the placenta and was discharged with it from the uterus, or we may assume that cells from a proliferating chorio-epithelioma penetrating the uterine veins, were torn off and reached the vaginal veins where they set up malignant proliferation.

In the second case, there was an atypical chorio-epithelioma in the vagina in conjunction with a cystic mole in the body of the uterus, which had eaten far into the wall of the uterus, and in some places had broken through the serous coat. In the lumen of the blood-vessels were found Langerhans's cells and masses of syncytium of varying sizes. The metastasis of ectodermal elements in the wall of the vagina in this case shows that a cystic mole may give rise to a chorio-epithelioma. A supravaginal amputation of the uterus was done and three weeks later the vaginal tumor was excised. Fifteen months later the patient was completely well.

The third case was a typical advanced chorio-epithelioma in a very much enlarged uterus with metastases in the vagina and pelvic tissue. Death resulted three hours after total extirpation through the vagina.

The total vaginal extirpation of a typical chorio-epithelioma with metastases in the labia majora, the liver, and the lung, following a delivery at normal term, was apparently successful, but the patient died one year after the operation.

Another patient had typical chorio-epithelioma with metastases in the vagina, the pelvic tissues, the liver, and the lungs, seven months after the delivery of a mole curettage, and a second one two months later. Ten months later abdominal extirpation of the uterus was done. The patient died soon afterward on account of her already exhausted condition.

EBELER.

Kelly, H. A., and Neel, J. C.: Cauterization of "Inoperable" Carcinoma of the Cervix of the Uterus. *Bull. Johns Hopkins Hosp.*, 1913, xxiv, 372.
By Surg., Gynec. & Obst.

The results which the authors obtained by a thorough cauterization of an advanced carcinoma of the cervix of the uterus, which later made possible a radical abdominal operation, seemed to them to justify a detailed report of a case.

Briefly, the case was one of advanced carcinoma of the cervix of the uterus in which the large masses of carcinomatous tissue could be torn away with the fingers. It had extended quite out to the pelvic wall on the left side. On account of the apparent extent of the growth and wide involvement, a radical operation was at first considered inadvisable to even attempt. Therefore, under gas anæsthesia a deep cauterization was done on all sides of the growth. About two weeks later such a marked improvement in the condition was noted that a radical abdominal operation was made possible.

This case seems to demonstrate very conclusively that a large part of the apparent invasion and induration was due to the inflammation which attended this extensive ulceration, and the authors conclude that:

1. The extensive radical abdominal operation offers the greatest hope of absolute cure in patients suffering from carcinoma of the cervix of the uterus.
2. The percentage of operability has gradually increased with the adoption of the radical abdominal operation.
3. An exploratory operation is occasionally necessary to determine whether or not the radical operation is to be attempted.
4. Pelvic induration may be due to the following causes: (a) To direct extension of the new growth through the cervix into the broad ligament on either side; (b) to a secondary inflammatory reaction in one or both broad ligaments; and (c) to an extensive pelvic peritonitis involving one or both broad ligaments; hence, the immobility of the cervix is not an infallible sign in determining whether or not a case is operable.
5. In advanced cases of carcinoma of the cervix a preliminary curettage and cauterization is advisable, for the following reasons: (a) A large portion of the friable new growth may be removed through the vagina. (b) It is an important procedure in the disinfection of the vaginal field. (c) The induration in the broad ligaments, due to secondary inflammatory reaction, may be relieved, causing the

new growth to become circumscribed and rendering a previously immobile cervix mobile.

GEORGE E. BEILBY.

Barrett, C. W.: The Carcinoma Question, as It Pertains to the Uterus. *Med. Rec.*, 1913, lxxxiv, 1109.
By Surg., Gynec. & Obst.

In discussing the practical side of carcinoma as it relates to the uterus, the author expresses the opinion that carcinoma represents a tissue reaction against disease, the epithelial proliferation being a tissue reaction against the infectious parasite. Hence carcinoma is to be viewed as a local manifestation caused by mechanical, thermic, or actinic irritation, which serves as a means of introducing some micro-organism yet unknown. The public and physicians should be educated to the recognition and treatment of benign conditions which constitute what the author calls precancerous conditions, such as erosions, eversion, cystic degenerations, fibroids, polypi, etc.

The author favors the abdominal operation for carcinoma of the uterus, and carries it out in the modern approved fashion. Where total removal is impossible, he relieves the pain, the hæmorrhage, and the discharge by thorough cauterization with the ordinary soldering iron. Acetone is advised for temporary relief. The author lays stress on three points: (1) The eradication of conditions which, if untreated, might result in carcinoma; (2) Early radical removal when carcinoma has been diagnosed; (3) The treatment of advanced, inoperable carcinoma by repeated cauterizations.

S. W. BANDLER.

Haendly, P.: The Effect of Mesothorium and Röntgen Rays on Carcinoma of the Uterus and the Ovaries (Die Wirkung der Mesothorium- und Röntgenstrahlen auf das Carcinom, den Uterus und die Ovarien). *Strahlentherapie*, 1913, iii, 300.
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author makes the following observations as the result of a thorough histopathological examination of cancer tissue of the uterus and ovaries that had been subjected to irradiation. A radiant treatment of two or three weeks' duration has a direct elective effect on cancer tissue (contrary to Exner's opinion) consisting in a primary injury of the cancer-cells, which leads to a disturbance in the growth of the cells, lack of mitosis and giant-cell formation, and, to a certain degree, to changes in the character of the cells (flat, scaly epithelium); and, finally, by karyolysis and disappearance of the non-nucleated masses of protoplasm, to complete destruction of the cells.

The connective tissue shows a new growth to replace the destroyed carcinoma cells. This new-formed connective tissue becomes sclerotic and degenerates, just as the rest of the connective tissue; the smooth muscle atrophies and disappears almost entirely and some of the muscle fibers show hyaline degeneration. In the ovary the primary follicles

are completely destroyed and the vessels show hyaline degeneration of the adventitia and media; the latter is calcified here and there. From proliferation of the intima there is obliteration of numerous vessels; the elastic fibers swell and form clumps; and the plasma cells and eosinophile leucocytes disappear with the increasing sclerosis and hyaline degeneration. The clinical results of these changes remain to be seen.
DORN.

Pető, E.: Clinical and Histological Discussion of the Treatment of Cancer of the Uterus, by Wertheim's Operation (Klinische und pathologisch-histologische Beobachtungen über die Heilung des Gebärmutterkrebses mittels der Wertheimschen Operation). *Virchow's Arch. f. path. Anat., etc.*, Berl., 1913, ccxiii, 470.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author reports 100 cases operated on by Wertheim's method, 29 mild and 71 severe cases. Those cases are designated as mild in which the parametrium does not show any great degree of resistance, the mobility of the uterus is not much altered, and the general condition is good. In adiposity, myodegeneration, arteriosclerosis, etc., the vaginal operation was performed.

Those cases are called severe in which a carcinomatous crater is formed, in which the cancer has invaded the vagina, and those in which the parametrium, at least on one side, is diffusely infiltrated as far as the pelvic wall. In these cases the uterus was not movable or only slightly so, and the carcinoma had not involved the bladder and rectum. Sixty-three per cent of the cases were operable. The results were: Primary mortality, 14 (1 mild, 13 severe cases); free from recurrence for 5 years, 10 (6 mild, 4 severe); free from recurrence for 3 to 4 years, 15 (5 mild, 10 severe); free from recurrence for 1 to 2 years, 3 (2 mild, 1 severe); recurrences, 23 (4 mild, 19 severe); dead without local recurrence, 13 (3 mild, 10 severe). No information could be obtained in regard to 20.

These cases histologically confirmed the fact that parametrium, which clinically was very hard, was frequently not carcinomatous but showed only inflammatory infiltration; moreover, that in beginning carcinoma where the parametrium was quite soft, carcinoma could be demonstrated microscopically, or that even if the parametrium was free carcinomatous glands were found. This explains the recurrence in clinically mild cases and the recovery of very severe ones. Since radical removal of carcinomatous glands is not possible, the chief emphasis should be laid on the radical removal of the tissue of the parametrium and vagina until sound tissue is reached.
ADOLPH.

Geist, S. H.: A Contribution to the Histogenesis of Sarcomatous Change in Uterine Fibromyomata. *Am. J. Obst.*, N. Y., 1913, lxxviii, 1053.
By Surg., Gynec. & Obst.

In a study of 250 cases of fibromyomata of the uterus and cervix, Geist found sarcomata of various

types twelve times. In addition to the recognized sites for the origin of sarcomatous change, the interstitial tissue of the myoma, and the adventitia and endothelium of the lymph and blood vessels, Geist found that in two of his cases the sarcomata arose from the muscle fibers as has been described by Williams, Pick, and others. N. SPROAT HEANEY.

Freund, H.: Etiology of Myoma of the Uterus (Zur Ätiologie der Uterusmyome). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxiv, 75.
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

From a historical review of the subject, it is evident from the age at which myoma of the uterus most frequently appears, viz., 30 to 50 years, that the functional activity of the uterus has a share in the formation of myoma, that menstruation and pregnancy are involved, but that predisposition also plays a great part. Foetal inclusions were first found by Freund in adenomyoma of the wolffian duct, and inclusions originating from the endometrium were also demonstrated. These findings are also important in the etiology of leiomyoma. Most important of all, however, there is real foetal cell material that, under some conditions, can stimulate the muscular tissue to proliferation. There are epithelial inclusions also in spherical myomata.

Freund believes, from a study of one of his cases, that muscle proliferation in a beginning myoma causes the original elements, connective-tissue cells, capillaries, and foetal epithelium to disappear. The points of insertion of the tubes and the internal wall of the uterus are especially liable, because there is a more pronounced interlacing of the muscle fibers. Local and general predisposition contributes to the production of myoma. In 600 cases of myoma, Freund found 36 of infantilism and 66 with some form of constitutional abnormality.

There is local predisposition in infantile uterus because of the defective uterine wall and the epithelial elements deep down in the muscular layers. The same is true of bicornuate uteri; the whole cavity must be laid bare by a lateral incision through the angles. Large ovaries (infantilism) also probably play a part from the functional disturbances that they create; the disorders of the heart may be regarded as a result of incomplete development of the heart. ROBERT SCHRÖDER.

Scott, S. G.: The Radiographic Appearances of Calcifying Fibroids. *Arch. Röntg. Ray*, 1913, xviii, 246.
By Surg., Gynec. & Obst.

Scott calls attention to the necessity for caution in the interpretation of shadows in the regions of the kidneys, ureters, or bladder. Though cases in which other shadows simulate calculi are rare, we must nevertheless guard against error. In case of doubt, means should be adopted to prove the shadow to be a calculus in the urinary tract, such as collargol injection, opaque bougies, and stereoscopic examinations. He adds to the long list of such shadows calcified fibroids of the uterus. Fibroids

are usually very large before they undergo calcareous changes, and are liable to give bladder symptoms, thus adding to the difficulty of the diagnosis.

A good differential point is that vesical calculi are usually homogeneous, or consist of concentric layers, while calcifying fibroids throw shadows of uneven density, somewhat resembling calcareous glands. LEOPOLD JACHES.

Wiese, F. W.: Increase of Temperature During Menstruation, in Pulmonary Tuberculosis (Über menstruelle Temperatursteigerungen bei Lungentuberkulose). *Beitr. z. Klin. d. Tuberk.*, 1913, iv, 335.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

An increase in the temperature during the menstrual period is of diagnostic importance as it occurs most frequently in tuberculosis, according to Kraus in two-thirds of all cases. A premenstrual increase occurs in 40 per cent. Subfebrile temperatures up to 99° F. are of significance for the initial stages. The increase in temperature before the menses is thought to be due to a progress of the pulmonary process which may be explained by hyperæmia of all the organs, including the lungs. If the rise in temperature is only a slight one, a resorption of old foci is concerned; if high, an exacerbation of inflammatory foci. The heat regulating center of the tuberculous patient is so labile that it is stimulated by exercise, psychic influences, etc. Easily excitable persons react much more readily with an increase in temperature, pulse rate, and all metabolic processes. Intramenstrual elevations of temperature occur in 13 per cent, usually on the first day and at times also continuing over the second. The endometrium is the portal of entrance for bacteria. Often the picture is that of a seriously diseased person. Cases of post-menstrual elevations of temperature are rare, amounting to about 2.4 per cent, and are mostly subfebrile. They are a very unfavorable sign. In rare instances menstruation may exert a beneficial influence and cause a decrease in the temperature. The author observed intramenstrual decreases of temperature in 11.5 per cent of his patients who had previously had subfebrile and even febrile temperatures, which continued afterwards to be afebrile. This fact might be explained by the improved circulation in the lungs during the menses. The time of the ripening of the follicles coincides with that of the increase in temperature. The increase in temperature, either before, during, or after menstruation, corresponds to the time of rupture of the follicle, which may occur either before, during, or after the period. Menstruation in tuberculous women deserves particular attention as it may serve as an aid in diagnosis and even in prognosis. PONTICK.

Giles, A. E.: Pessaries Versus Operations, in the Treatment of Uterine Displacements. *Clin. J.*, 1913, xlii, 597.
By Surg., Gynec. & Obst.

The author defines the types of cases in which pessaries are of value and distinguishes the forms

where operation is advisable. Cases in which there is a clear indication for pessary treatment include retroversion of the uterus following confinement; retroversion of the uterus in young, nulliparous women when the symptoms are of recent origin; retroversion of the gravid uterus in the early months; prolapse of the uterus when the perineum is sufficiently good to support a ring; and cystocele with prolapse, when the perineum is sound. The author takes it for granted that in all cases the retroversion must first be rectified before the pessary is introduced.

The cases in which there is a clear indication for operation include displacements with the uterus fixed by adhesions; displacements complicated by ovarian tumor, or tubal disease; displacements complicated by fibroids, etc. Where retroversion is associated with a narrow upper vagina which will not bear a pessary, and in those cases of prolapse of the uterus and vaginal walls where the perineum will not support a pessary, operation is indicated. In cases of displacement where the pessary is not well borne, especially in neurotic patients, operation is advised; total procidentia yields only in operation. The author adds a third group of patients who are allowed to choose between the permanent wearing of a pessary and the freedom from the annoyances which may be associated from its use, which freedom can be gained by operative procedure. The operative mortality is practically nil. The operated cases show an improvement in the general condition of the patient in 90 per cent. Twelve per cent of the cases have gone through labor without complication and with a permanently good position of the uterus. The author believes that pessaries have their place but that improved technique and diminished mortality have led to the encroachment of surgical procedures on the domain of pessaries.

S. W. BANDLER.

Zickel, G.: Incision Between the Spines for Alexander-Adams Operation (Alexander-Adams mit Tuberculumschnitt). *Zentralbl. f. Gynäk.*, 1913, xxxvii, 1230.

By *Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.*

From its use in fifteen cases, the author again recommends Liepmann's incision from one spine of the pubis to the other for the Alexander-Adams operation. The view of the field of operation is at least as good as with the ordinary inguinal incision; the skin suture does not lie in the same plane as the fascia suture; and it gives a better cosmetic result, as it is covered with hair, and can, without difficulty, be extended to make a Pfannenstiel's incision.

KALB.

Holden, F. C.: The Treatment of Sterility by the Dudley-Reynolds Operation. *Am. J. Obst.*, N. Y., 1913, lxviii, 1064. By *Surg., Gynec. & Obst.*

Holden reports here the results of 48 cases of sterility and dysmenorrhœa operated by Polak by a combination of the Reynolds and Dudley opera-

tions. Reports could be obtained from only 40 of the cases. All subjects were selected as free of complications that might jeopardize the intent of the operation. Of the 40 who reported their condition 32 were married and 8 were single. In 34 cases dysmenorrhœa has been cured; in 5 not relieved; in 1 it was worse; in all, 85 per cent of those suffering from dysmenorrhœa were cured. In eight, or 25 per cent, of the 32 married cases sterility has been cured. All cases were operated during a period of 19 months preceding December, 1912.

N. SPROAT HEANEY.

ADNEXAL AND PERIUTERINE CONDITIONS

Puech, P., and Vanverts, J.: The Rôle of the Corpus Luteum in the Fixation and Development of the Ovary in Woman (Du rôle du corps jaune dans la nidation et le développement de l'œuf chez la femme). *Rev. mens. de gynec., d'obst. et de pediat.*, 1913, viii, 236.

By *Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.*

The author tried to prove, by the examination of human material, Bornsch's theory, based on von Fränkel's experimental work, as to the important part played by the corpus luteum in the fixation and development of the ovum.

He collected from the literature 25 cases of ovariectomy during the first two months of pregnancy. In 20 cases both ovaries were removed, in 5 cases the one containing the fresh corpus luteum; abortion followed the operation in only 5 cases.

The authors conclude from this that the removal of the corpus luteum in the first two months of pregnancy does not necessarily result in the interruption of the pregnancy, but that the corpus luteum does have some significance. For they found that abortion takes place more frequently in the first two months (25 per cent) than in the third (11 per cent) and fourth (12 per cent); moreover, that it occurs more frequently with bilateral ovariectomy (25 per cent) than with unilateral ovariectomy (16.5 per cent) during the first two months.

KELLER.

Ries, E.: Etiology of Periodic and Alternating Swelling of the Ovaries (Zur Ätiologie periodischer und alternierender Ovarialschwellungen). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxiv, 312.

By *Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.*

From two cases, which he has carefully observed, the author calls attention to a symptom-complex, which he designates as periodical and alternating swelling of the ovaries. Clinically, the condition is characterized by a feeling of fullness and weight in the abdomen, midway between the two menstrual periods; palpation during the attack shows that there is a swelling of the ovary of the side where the pain was felt. The swelling cannot be felt after menstruation is over. If the attacks are not especially severe the condition does not demand treatment, but if the swelling persists in returning and causing the feeling of fullness and weight in the

abdomen, and if there are pressure symptoms in the extremities, radical operation is indicated.

FRANK.

Outerbridge, G. W.: Thyroid-Tissue Tumors of the Ovary. *Am. J. Obst., N. Y.*, 1913, lxxviii, 1032. By Surg., Gynec. & Obst.

Outerbridge describes minutely the case histories and findings of two new cases of thyroid-tissue tumors of the ovary, and has collected, in tabulated form, 44 cases from the literature. By tissue stains he was able to demonstrate that the thyroid-tissue contained iodine. From his study of this subject he concludes that:

1. In certain ovarian tumors there occur areas of tissue which cannot be distinguished, histologically, from that of the thyroid gland.

2. Between tumors which show a complex teratomatous structure, containing among numerous other elements a small amount of thyroid tissue, and those composed solely of thyroid, there is no sharp dividing line.

3. All of these tumors are of similar genesis; they are teratomata, with varying degrees of suppression of the ectodermic and mesodermic elements.

4. The large majority of these tumors are clinically benign; the few that are malignant show, in most instances, areas of unmistakable irregularity in their cellular structure, or give other histological evidence of having assumed a destructive type of growth.

5. The thyroid tissue in the ovary is of no functional value, at least in the majority of cases, and these growths give rise to no symptoms other than those which would be produced by any type of ovarian tumor of equal size. N. SPROAT HEANEY.

Oulesko-Stroganoff, C.: Study of Malignant Degeneration in Cysts of the Ovum (Beitrag zum Studium der malignen Degeneration der Ovarialcysten). *Tr. Internat. Cong. Med.*, Lond., 1913, Aug. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Proliferating cysts may be regarded as transitional forms between benign and malignant tumors. The epithelial hyperplasia which characterizes this group of tumors shows their tendency to malignant degeneration. In the cysts that have undergone malignant degeneration we can find histological evidence in the early stages that they have originated in proliferating cystomas.

Calmann, A.: Treatment of Protracted Febrile Suppurative Disease of the Adnexa (Ein Beitrag zur Behandlung langdauernder, fieberhafter, eitrig-Adnexerkrankungen). *Fortsehr. d. Med.*, 1913, xxxi, 953.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Formerly, under the influence of surgery the treatment of suppuration of the adnexa was very radical; to-day, it is conservative unless there is some pressing indication for operative interference. In acute cases there is 90 per cent of recoveries without

operation. In chronic cases, where operation is sometimes necessary, the most conservative procedure should be chosen; where there is a collection of pus in Douglas' pouch, incision through the vagina, which also hastens recovery in abscesses situated higher up. Incision parallel to Poupert's ligament leads to hernia of the abdominal wall and demands secondary suture. Total extirpation of the uterus and adnexa is not always to be avoided, but it should be done only when there is some complication demanding it, such as perforating appendicitis or myoma. In the febrile purulent affections of the adnexa, lasting for months, and generally of puerperal origin, with involvement of the ovaries, which are difficult to open through the vagina, hard to drain, embedded in indurations, adherent to the intestines, and often lying high up in the iliac fossa, lateral colpotomy by Dührssen's method may be used.

The technique consists of incision from the middle of the anterior vaginal vault extending laterally around the vaginal portion of the uterus; dissection of the bladder; and cutting of the broad ligament after lateral ligation. The lower part of the tumor is laid bare and incised; the abscess walls are sutured to the edges of the vaginal wound; a drainage tube is inserted into the abscess cavity; the bladder replaced, and the vaginal wound sutured.

The author has been able to avoid the opening of the vesico-uterine fold and Douglas' pouch, as done by Dührssen, but has been obliged many times to separate the broad ligament, so that he could push Douglas' pouch and the bladder up. He reports 8 cases operated on in this way, among them two purulent hæmatocèles. Seven patients recovered completely, one was very much improved subjectively and objectively, so that she could have a radical operation after a year. The incision should be free, the drainage tube should be thick and left in place three to four weeks after the discontinuance of fever. In conclusion, he mentions that Stratz reported a lateral colpotomy, which was never adopted on account of danger to the ureters and uterine artery. VON MILTNER.

Björkenheim, E. A.: Collagen in the Fallopian Tube, at Different Ages (Das kollagene Gewebe in der Tuba in den verschiedenen Altersperioden). *Finska läk.-sällsk. handl.*, Helsingfors, 1913, lv, 141. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author examined for collagen in the tube by the trypsin digestion method. Twenty-seven cases were examined from embryos, new-born infants, children, and adults up to 72 years of age. He found the mucosa of the tube filled with an extremely dense network of fine connective-tissue fibers extending into the folds of the mucous membrane and completely filling them — the fibers of the network generally run parallel to the folds. This network is generally very dense in embryos and children; somewhat less so after the beginning of menstruation.

After the beginning of the climacteric, instead of the fine network there is a network of clumps of apparently swollen fibers. In the muscular layer the connective-tissue fibers run concentrically around the lumen in a wave-like manner. They are connected directly with the connective tissue in the mucosa and with increasing age become denser, so that after the beginning of the climacteric and even during the period of sexual activity regular bundles of connective tissue may be seen. In the subserous coat nothing can be seen but a tangle of connective-tissue fibers of varying lengths around the numerous blood-vessels, growing denser with increasing age. The epithelium is separated from the subepithelial tissue by a limiting membrane. The author also examined the elastic tissue of the tube and found that elastic fibers are generally found before the age of sexual maturity only in the vessel walls, and that they increase in number later. They are to be found as fine, isolated fibers in the subserous and muscular layers. They generally decrease in number after the menopause.

Holzapfel, K.: Technique of Tubal Sterilization (Zur Technik der tubaren Sterilisierung). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxiv, 189.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Holzapfel proposes the following procedure for temporary sterilization:

After opening the abdomen the tube is caught with forceps a little to the lateral side of the middle and cut through on the median side of the forceps, together with about 1 cm. of the broad ligament. The uterine end of the tube, not including any peritoneum, is caught with sharp forceps and the peritoneum dissected off for about 2 cm. The knife generally has to be used to help in this in order to avoid injuring the peritoneum. The folds of the broad ligament are separated for a distance of 1 to 3 cm., varying according to whether they can be readily separated without injury to them. The end of the tube is ligated with a fine catgut suture and cut off short; then, beginning with the uterine end of the tube, the peritoneum is sutured continuously and the serous surfaces approximated as far as the lateral end of the tube with a sharp, thin, round, smooth needle. The lateral end is ligated in the depression made by the forceps, so that the opening remains outside the peritoneum. If the occlusion is to hold, it is, naturally, very important that the peritoneum should not be torn. Holzapfel thinks it is better that the lateral piece of the tube with both openings should lie within the peritoneum than that the median opening should be lowered.

This operation has been used in four cases, all of them more than a year ago. Conception has not taken place in any case and there has been no opportunity to perform the operation for restoring fertility. This would consist in drawing up the lowered end of the tube, splitting it, holding it open with two sutures, and suturing it to the lateral end.

KÖHLER.

Steidl, K.: Primary Desmoid Tumors of the Round Ligament (Zur Kasuistik der primären desmoiden Tumoren des Ligamentum rotundum). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxiv, 386.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

After a short review of the literature of the subject in which about 30 cases are reported, the author describes a new case of his own.

The patient, a 41-year-old III-para, had for two years been troubled with dysmenorrhœa and frequent desire to urinate, and had noticed at the menstrual period a swelling of the abdomen over the symphysis. On examination a hard median tumor was found reaching above the umbilicus; the uterus lay behind it, movable, and apparently not increased in size. A diagnosis of solid ovarian tumor was made. On operation the tumor was found between the recti, covered with the very thin fascia, which was closely adherent to the parietal peritoneum, which was torn on removing the tumor. The pedicle of the tumor ran toward the internal inguinal ring, the inguinal canal being obliterated. The uterus and adnexa were normal and the left round ligament passed through the internal inguinal ring directly into the pedicle of the tumor. The tumor had the form of a loaf of cheese, 20 x 20 x 13 cm. in size, weighing 2680 gms. The microscope showed it to be a typical fibromyoma without degeneration. The patient had an uneventful recovery.

It was one of those rare cases of tumor of the round ligament of considerable size developing within the inguinal canal, and showing the yet more rare growth upward between the muscles and the fascia. The majority of these desmoid tumors of the round ligament grow outward through the inguinal canal.

SCHINDLER.

EXTERNAL GENITALIA

Leonard, V. N.: The Post-Operative Results of Trachelorrhaphy, in Comparison with Those of Amputation of the Cervix. *Surg., Gynec. & Obst.*, 1913, xvii, 35.

By Surg., Gynec. & Obst.

A complete post-operative history was obtained in 167 cases in which the cervix had been amputated or repaired by Emmet's trachelorrhaphy and the results of the two operations contrasted as to their therapeutic efficiency and as to their influence upon the subsequent marital history.

The author notes that although post-operative hæmorrhage is by no means uncommon after amputation of the cervix—5 per cent—it is of very rare occurrence after trachelorrhaphy. Furthermore, the hæmorrhage after amputation of the cervix may occur as late as the twenty-seventh day in the convalescence, while such a delayed complication is very rare following Emmet's operation. In none of the cases of trachelorrhaphy was it necessary to resuture the cervix to stop hæmorrhage, while, after amputation of the cervix, this became imperative in six instances.

About 90 per cent of 167 cases reported a noticeable improvement in the general condition whether the plastic operation on the cervix was done alone, or in combination with other operations. This improvement in the general health is attributed to the removal of the cervix as a focus of chronic infection, in the cases of amputation of the cervix, but it is claimed that trachelorrhaphy can only exert an indirect influence on a chronic endocervicitis in rendering it more amenable to treatment. The presence of a marked endocervicitis is considered as much a contra-indication to the performance of trachelorrhaphy as an indication for amputation of the cervix. Furthermore, the cervix presenting multiple or stellate lacerations should always be amputated, trachelorrhaphy being reserved for those cases showing one or two discrete lacerations.

Of the 167 cases, 85 per cent complained of a vaginal discharge before operation. After amputation of the cervix, in over 92 per cent of the cases, the leucorrhœa either disappeared entirely in 62.5 per cent of the cases, or was noticeably diminished in amount in 30 per cent. On the other hand, following trachelorrhaphy, the percentage of cures was much lower, the rate being 42 per cent, the percentage of cases in which the operation showed no effect on the discharge being more than twice as high. In the latter group of cases, the endocervicitis present was usually only very slight and leucorrhœa a relatively unimportant symptom, whereas, in the former group, the reverse was true. It is claimed, therefore, that although the repair of a lacerated cervix may render a mild grade of endocervicitis more amenable to treatment, trachelorrhaphy can not be considered as having any direct effect upon the infection present, other than to enliven it, and that the presence of a marked endocervicitis should be considered a contra-indication to its employment.

Of 148 cases of lacerated cervix, 118, or 80 per cent, had dysmenorrhœa before operation. In 62 per cent of these cases there was noticeable reduction in menstrual pain following operation; following amputation of the cervix, in 59 per cent the dysmenorrhœa was cured or improved and the same result obtained in 70 per cent of the cases in which trachelorrhaphy was performed. The conclusion is reached that lacerations of the cervix bear some definite relationship to dysmenorrhœa in multiparæ.

In order to compare the fertility of the patients after the two operations, only those cases in which the occurrence of pregnancy would naturally be expected were used; i.e., married women under 40 years of age at the time of operation, who had borne one or more children previously and upon whom no operation had been performed which might render the occurrence of impregnation unlikely. It was found that of this group but 19.4 per cent reported fertility following amputation of the cervix, while after trachelorrhaphy, 38 per cent of the cases had become pregnant. The comparatively high percentage of sterility following amputation of the

cervix is explained by the frequent occurrence of cicatricial stenosis after this operation, it being pointed out that the cicatrix, invariably following the operation, occupies a plane perpendicular to the cervical canal and in contracting must encroach upon its lumen from all directions. Cases are cited of complete cervical atresia following the operation, with hæmatometra resulting.

The influence of amputation of the cervix upon the course of subsequent pregnancy is very marked, while trachelorrhaphy is apparently without effect in this respect. The incidence of premature delivery and abortion is more than doubled after amputation of the cervix, less than half of the pregnancies occurring after this operation being carried to full term. On the other hand, the course of pregnancy after trachelorrhaphy is not influenced one way or the other.

More than 60 per cent of the full term deliveries after amputation of the cervix were difficult. Following trachelorrhaphy, 80 per cent of the full term deliveries were described by the patients as easy labors. The author claims that the rigid cicatrix which accounts for the high percentage of sterility in the former group likewise explains this serious influence upon the course of labor. In properly selected cases, the therapeutic efficiency of Emmet's trachelorrhaphy is quite as high as that of amputation of the cervix and, since the many serious objections to the latter operation as regards the subsequent marital history do not apply, it should be considered the operation of choice for women in the childbearing period.

Muret, M.: Symptomatology of Vesicovaginal Fistulæ (Zur Symptomatologie der Blasen-Scheiden-fisteln). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxiv, 299.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In four cases of vesicovaginal fistula, the author noticed an interesting phenomenon. The patients could void urine voluntarily in a stream through the vagina from a small vesicovaginal fistula. There was a partial continence of the bladder, and there was no collection of urine in the vagina, as frequently happens. When the bladder was filled, the tension of its walls, the abdominal pressure, and the contraction of the detrusor muscles opened the small fistula easier than it could overcome the resistance of the sphincter of the bladder, which explained the voluntary voiding of urine through the vagina. The author believes that this continence is explained by the voluntary contraction of the muscles of the pelvic floor, which succeeded in closing the fistula temporarily; there was, moreover, a certain tonicity of the bladder muscles to be considered.

In all these cases the fistulæ were relatively high, they were small, and their edges were not stiff but smooth and pliable. Moreover, at the level of the fistulæ, the mucous membrane of the vagina and bladder was separated by a thick layer of tissue so that the fistulæ opened into a small cavity. **KELLER.**

Koch, J. A.: The Dry Treatment of Leucorrhœa and Cervical Erosions. *Illinois M. J.*, 1913, xxiv, 330. By Surg., Gynec. & Obst.

The author states that the etiology of leucorrhœa is endometritis, endocervicitis, cervicitis, and vaginitis, and that the underlying causes may be gonorrhœa, tuberculosis, carcinoma, chlorosis, constitutional tuberculosis, or constipation.

He thinks that treatment applied to the interior of the uterus is mal-treatment; also that douches carry germs to the upper portion of the vaginal canal and by softening, make reinfection possible.

The author's treatment is as follows: The vaginal vault is exposed by a speculum and wiped dry with gauze pledgets, then a drachm of the powder is poured into the vagina and dusted over the cervix and over the vaginal walls as the speculum is gradually withdrawn. At the next treatment the moist masses are removed and the powder reapplied. This treatment is repeated on the fourth, eighth, tenth, fourteenth, and eighteenth days.

In vaginitis in children a glass syringe is used to introduce the powder. The powder consists of aluminum acetate one part, kaolin two parts, and powdered talcum two parts.

EUGENE CARY.

Wiener, S.: High-Frequency Cauterization in the Treatment of Urethral Caruncle. *N. Y. M. J.*, 1913, xcvi, 1115. By Surg., Gynec. & Obst.

The author recommends this method of treatment very highly, the technique of which is as follows:

The caruncle and contiguous mucosa are anesthetized by the surface application of a 5 per cent cocaine solution. An ordinary insulated wire electrode is used with a spark of medium intensity. The tip of the electrode is held about one-eighth of an inch from the surface of the growth and the spark is passed successively over every part of its surface—the normal mucosa should be avoided. The entire application need not take longer than one minute. No pain whatsoever is experienced by the patient, provided the cocaine has had sufficient time to act. There is no reaction after the effects of the cocaine have worn off; in fact, where dysuria and tenesmus are present, the very first urination following the treatment is less painful than those preceding it.

To sum up, the advantages of this treatment for urethral caruncle are: (1) The ease and painlessness of its application; (2) the immediate alleviation of dysuria and tenesmus; (3) the absence of local reaction; and (4) there is no necessity for confining patient to bed, as after excision and suture; (5) the complete *restitutio ad integrum* of the mucosa.

EDWARD L. CORNELL.

Fromme, F.: Diverticula of the Urethra (Über Harnröhrendivertikel). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxiv, 143.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

From a study of the literature of the subject, the author believes that no authentic case of congenital

diverticulum of the urethra has been published, and that therefore they must be exceedingly rare. Most diverticula arise after contusion of the urethra during labor, when the mucosa and submucosa are torn, and a hernial sacculation is formed, in which urine collects after every micturition. The diagnosis is often difficult and can only be made after repeated careful examinations.

He reports two cases of his own where incontinence developed after delivery, caused by post-traumatic diverticula. In one case there was a diverticulum into which a supernumerary ureter opened. He concludes that this diverticulum must have been a remnant of Gaertner's duct.

HAGEN.

Von Franqué, O.: Prolapse of the Ureter Through the Urethra, with Remarks About the Histology of Œdema Bullosum (Über den Vorfall des Harnleiters durch die Harnröhre nebst Bemerkungen zur Histologie des Œdema bullosum). *Monatschr. f. Geburtsh. u. Gynäk.*, 1913, xxxviii, 115.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In a case of ureterocele in a young woman, reported by the author, the prolapsed portion protruded into the urethra and had become necrotic. The case was cured by a suprapubic cystotomy. Cystoscopic examination revealed a papilloma which might have been the cause of the prolapse. A bullous œdema, which surrounded the ureter, was composed of œdematous papillæ, analogous to the hydatid mole. The disease occurs most frequently with congenital atresia of a double ureter, only nine cases being found with a simple ureter, among 35 such cases. It is seen also, however, in congenital stenosis of the urethral ostium, followed, in the course of years, by an atresia. To the latter class belong the recently operated cases; all the former ones soon died.

The chief dangers attending the disease are ascending infections of the urinary ducts from obstruction of the urethra, necrosis, and sloughing of the prolapsed structures (cystitis, hydronephrosis, pyelitis). It is especially dangerous during pregnancy in consequence of a swelling of the mucosa. So far, five cases have been cured by operation, although a correct diagnosis was not rendered in a single case. The diagnosis can be made by cystoscopy only when a ball-shaped elevation exists at the ureteral termination, which is covered by a normal visceral mucous membrane, and which enlarges or decreases corresponding to pressure and position. As these signs are absent in cases of rupture of the ureterocele, bullous œdema, etc., they are frequently thought to be tumors. The treatment in extensive prolapses is suprapubic cystotomy, complete removal and suturing of the ureteral and visceral mucous membranes. The results of this treatment are very satisfactory.

Smaller prolapses are treated by endovesical incision of the stenosed orifice. The vaginal method, with incision of the posterior urethra according to Simon, is rejected on account of the difficulty of

bringing into view the affected structures and the liability of interference with urinary continence. The author considers the stenosis an arrested development, because, during foetal life, the ureteral ostia are at first very narrow and later widen considerably.

PEITZSCH.

Minakuchi, K.: Urinary Fistulae (Über Harnfisteln). *Beitr. z. Geburtsh. u. Gynäk.*, 1913, xviii, 377.

By *Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.*

In the Freiburg Gynecological Clinic from October, 1907, till March, 1912, there were 45 cases of urinary fistula, 34 of them being fistulae of the bladder and 11 of the ureter. The cases were tabulated, showing age, cause, and preceding operations for fistula, time of appearance of the fistula, kind and size of the fistula, operation, result, and further course.

Of the bladder fistulae there were three purposely produced through the abdominal wall, 15 from obstetrical injuries and 16 gynecological ones. Of the obstetrical injuries, 11 were in head presentations, with 8 forceps operations and perforation. Whether it was caused in individual cases by pressure necrosis or by tearing could not always be decided—anomalies in the pelvis were sometimes the cause.

Of the 16 gynecological cases there were 12 post-operative bladder fistulae (1 urethral fistula and 11 vesicovaginal fistulae), 3 purposely produced fistulae through the abdominal wall, and 1 fistula from a pessary. The fistula originated nine times after Freund-Wertheim's operation for carcinoma of the cervix, once after anterior colporrhaphy, twice after vaginal and abdominal total extirpation. Suture is the only treatment recommended by the author for fistula. Those occurring during labor should be sutured immediately; otherwise there should be a delay of six to eight weeks after delivery. Frequently a careful preliminary treatment is necessary for inflammations or cystitis. To widen the vagina, which is often contracted, paravaginal incisions, either in the median line or on the sides, may be used. In the smaller fistulae formation of flaps and suture may be used. The edges of the fistula are excised and the vaginal wall dissected from the bladder outward 0.5 to 1.5 cm.

The suturing, if possible, should be done in three layers. Larger fistulae and defects in the urethra are covered by transplantation of flaps from the vaginal mucous membrane. The vaginal defect is repaired by suture or transplantation of flaps from the neighboring tissue.

In defects of the cervix the anterior vault of the vagina is split transversely and the bladder separated from the cervix by the formation of flaps. Once the abdominal route was chosen, and by suturing the parietal peritoneum to the uterus and the broad ligament the field of operation was brought outside the peritoneum. Of the 34 cases, 23 were treated by operation; 21, or 91.3 per cent were cured, and

2, or 8.7 per cent improved. In these cases the treatment is not yet finished. There were 11 cases of fistula of the ureter, which were also analyzed as to location, origin, etc. Of the 6 cases operated on, there was vaginal transplantation of the ureter into the bladder in 4 cases—three of which were cured and one not; abdominal transplantation in one case, ending in death; and plastic operation on the ureter in one case being without result. As a prophylactic measure, in injuries of the ureter during operations, an immediate exact transplantation into the bladder is recommended.

MERTENS.

MISCELLANEOUS

Bell, W. B.: The Relation of the Internal Secretions to the Female Characteristics and Functions in Health and Disease. *Brit. M. J.*, 1913, ii, 1274.

By Surg., Gynec. & Obst.

Discussing first the production of the female characteristics and functions, the author believes that only where the whole endocrinus system is in perfect harmony and acting efficiently may the genitalia become functionally active at puberty, on condition, of course, that these organs are morphologically normal at birth. Thyroid or pituitary insufficiency may cause the genital organs to remain infantile, and diseases of these structures may cause retrogression in the genitalia even after they have functionated normally. The development of the gonads and uterus causes retrogression in the thymus, and as a result of the withdrawal of the thymus secretion the genital organs develop—both theories being thus upheld.

That the ovary alone is not responsible for the changes at puberty or for the integrity of the genitalia is shown by many facts, both experimental and clinical. The pituitary body is undoubtedly of influence here, and Bell regards this body as one organ, though which portion of it possesses the genital influence is not yet clear. Removal of the thyroid in producing atrophy of the uterus reveals a further influence not to be disregarded.

Taking up derangements in the development of the genital organs and their functions, the author first discusses precocious puberty. While in the male this appears in conjunction with diseases of the suprarenal and pineal glands, in the female it is seen oftenest where the ovary is affected. Hence, Bell argues that this phenomenon in girls is associated only with tumors or hyperplasia of the gonads.

Delayed puberty, on the other hand, being due to so many causes apart from the internal secretions, is with difficulty proven to result from ovarian disturbance. Under-development of the ovary is more apt to be a correlated condition. Practically, it appears that the thyroid and pituitary, in association with the ovaries, are the factors most concerned in the final development of the female genital organs. Attention is called, too, to a practical point in treatment, that unless genital activity be aroused during the period of change, before twenty years, it

is impossible sufficiently to control metabolism in order to produce the effect desired.

Under the general heading of derangements of the fully established genital functions, the question of ovarian insufficiency is discussed at length. While there is no real evidence that ovulation does not occur during pregnancy or that ovarian secretion, apart from that of the corpus luteum, is in abeyance, Bell suggests that if such is the case, other organs of internal secretion, as the thyroid and pituitary, may be subjected to considerable strain, the original cause of hyperplasia in these structures. The author strongly favors autogenous ovarian grafts, as the only ones of any use; thin, flat pieces, without cortex, being employed. Ovarian transplantation at best is only a mitigation of the artificial menopause.

Excessive ovarian secretion is expressed by an increase in sexual activity in certain types and by osteomalacia. It is probable that very soon injections of suprarenal and pituitary extract will be found efficient as controls in such hyperfunction.

Bell does not concur with the theory that eclampsia is caused by thyroid insufficiency.

Pituitary excess is more apt to produce masculinity and amenorrhœa in woman than excessive sexuality, as it does in the male, with a strong tendency toward sterility. Pituitary insufficiency shows expression also in amenorrhœa or scanty menstruation. As far as the genitalia are concerned, this is also the chief symptom in functional disturbances of the suprarenal glands.

CAREY CULBERTSON.

Herzog, H.: Involution Forms of the Gonococcus Neisser; and Their Rôle as Intra-Epithelial Cell Parasites (Über die Involutionformen des Gonokokkus Neisser und ihre Rolle als intraepitheliale Zellparasiten). *Virchow's Arch. f. pathol. Anat., etc.*, Berl., 1913, cxxi, 243.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The dissertation of the author considers the gonococcus from its biological, pathological, and clinical behavior and confirms the observations of the earlier investigators, especially Wertheim. Chronic gonorrhœal disease processes are due to the fact that gonococci are devoured by leucocytic microphages as well as by mucous membrane epithelial cells. The phagocytosis does not necessarily lead to a complete annihilation of the germs but may stop when the bacterial elements are still visible although morphologically deformed and weakened. The result is a condition of symbiotic adaptation between epithelial cells and incompletely bacteriolized germ elements, which morphologically do not any longer resemble the gonococcus. The involution forms, the morphology of which is minutely described, resemble, on cultures and in the cells of the mucosa, the vaccine exciters described by Von Prowazek.

SCHÜRER.

Porchownik, J. B.: Transference of Pain in Diseases of the Genital Organs (Übertragen der Schmerzempfindungen bei Erkrankungen der Genitalsphäre). *Monatschr. f. Geburtsh. u. Gynäk.*, 1913, xxviii, 719.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Diseases of the female genitalia are accompanied by reflex pains in various locations, particularly in the lower extremity and the pelvis. The sympathetic plexuses of the uterus and adnexa are located in the latter. The reflex pains in the so-called endometritis dolorosa are especially severe, but they also occur in oöphoritis, retroflexion of the uterus, etc. These pains are caused by anastomoses between the plexus of the body of the uterus and the first and second spinal nerves from the sacral plexus.

Pain in the bladder, the so-called cystospasm, and in the kidneys and gall-bladder are also explained by anastomoses of the sympathetic plexuses with each other and with the plexus of the body of the uterus. This also gives rise to the reflex cough (uterine cough of Auvarel). Attacks of neuralgic pain in the region supplied by the trifacial are interesting. Only certain areas of the skin of the face are painful, the so-called hyperalgesic zones. The irritation of the genital organs is transferred through the solar plexus to the cervical plexus of the sympathetic, and from there to the posterior roots of the spinal nerves and the trifacial.

GINSBURG.

Albers-Schönberg: Röntgen Ray Treatment in Gynecology (Röntgentherapie in der Gynäkologie). *Tr. Internat. Cong. Med.*, Lond., 1913, Aug.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Deep X-ray treatment in gynecology arose from the fact that the rays have a decidedly harmful effect on the male and female sexual glands. The effect on myoma is primarily exercised through the ovaries, but, in a considerable percentage of cases, there is a direct effect on the tumor cells, manifested by decrease in size or even disappearance of the tumor. The symptoms caused by the myoma improve markedly or disappear entirely. The hæmorrhage is changed to the normal menstrual type; oligomenorrhœa or amenorrhœa is obtained, and the general health is improved.

The symptoms of the artificial menopause are generally mild; the percentage of complete recoveries high; permanent results are certain in suitable cases. A certain number of myomas resist treatment and not all are suited for X-ray treatment. The narrowest and broadest interpretations of the indications for the treatment are set forth and are generally recognized. A greater number of cases are excluded after operation than before. The danger to the skin may be reduced to a minimum by suitable technique. The future must decide whether late injuries are to be feared.

OBSTETRICS

PREGNANCY AND ITS COMPLICATIONS

Huffman, O. V.: A Theory of the Cause of Ectopic Pregnancy. *J. Am. M. Ass.*, 1913, lxi, 2130.

By Surg., Gynec. & Obst.

The author described a very remarkable specimen of ectopic pregnancy removed at necropsy. The entire uterus, tubes, and ovaries were examined with a view to finding some confirmation of the inflammation or obstruction theories. The results were negative, but he found two supernumerary, but rudimentary, fallopian tubes, one attached to each of the fully developed, apparently normal tubes which enabled him to offer an explanation for the tubal pregnancy. He inferred that early in the embryological development of the individual, there was a duplication of the Müllerian ducts and that, with the subsidence in the growth of one pair, those portions which should have formed a second uterus, with all the factors that determine an implantation area, became fused as "rests" within the walls of the tubes, which went on to full development. Such a "rest" permitted the ovum to embed. His working hypothesis was thus formed; viz., that ectopic pregnancy is determined by an anomalous embedding area.

In further support of his theory, the author has examined sixty-eight specimens of tubal pregnancy, and with the difficulties of examining torn and often incomplete material, with the task of distinguishing shreds of tissues, chorionic villi, blood-clots, etc., he found a malformation in 54 per cent of the cases, as follows:

1. Six had large irregular diverticula which could not have been caused by the growth of the ovum.
2. Five had accessory ostia.
3. Three were associated with anomalies of the opposite tube.
4. Two presented small cysts, to which were attached accessory tubes.
5. Two had accessory ovaries.
6. One had an anomalous tubule attached to the broad ligament.
7. Five had accessory tubes.
8. Nine were simple dilatations of the tube by the growth of the ovum.
9. One showed a most unusual anomaly, a tube within a tube.
10. Three showed nests of decidua-like cells.

All of the anomalies found were examined microscopically in order to prove definitely their exact nature. A true decidual membrane was found in none of them. The ovum, when still *in situ*, was found embedded beneath the mucosa, which, with the blood-clot, covered it on the side next to the lumen of the tube, while on the side next to

the muscularis it was attached to a rich layer of cells derived from the trophiderm, which had invaded the maternal tissues. This evidence, besides the negative findings in regard to any obstruction or inflammation, is sufficient to warrant the establishment of the anomalous-embedding-area theory, the most logical of all the explanations for ectopic pregnancy. It is the most logical because it rests primarily on the mutual relation of the fecundated ovum and embedding site. The other theories, with the exception of Webster's, lose sight of this very essential mutual relation which obtains in the normal physiology of embedding. The theory of anomalous-embedding-area is not out of harmony with all the facts, both clinical and pathological. It is not illogical like the inflammation theory; inflammation, which is a recognized cause of non-embedding in the uterus, becomes, according to this inconsistent theory, an auxiliator of embedding outside of the uterus. Nor is it illogical, like the obstruction theory, according to which, if it were consistent, a fecundated ovum, caught in the cervix uteri or vagina, should go on and embed there. EDWARD L. CORNELL.

Mall, F. P., and Cullen, E. K.: An Ovarian Pregnancy Located in the Graafian Follicle.

Surg., Gynec. & Obst., 1913, xvii, 698.

By Surg., Gynec. & Obst.

The author reports a case of ovarian pregnancy in which an ovum six weeks old was found within the graafian follicle. The diagnosis was difficult on account of the misleading statements of the patient. The specimen is of great scientific value, for it is shown conclusively that the ovum had lodged itself in the graafian follicle, undoubtedly in the one from which it came, indicating that the sperm must have entered the follicle after it had ruptured. The fertilized ovum then found lodgment in the follicle, around which the corpus luteum developed. As in other cases which have been reported, no decidua was formed, which demonstrates fully that the decidua is not of embryonic origin.

Seitz, L.: Galvanic Irritability of Muscle in Pregnancy; and Tetany During Pregnancy

(Über galvanische Nervenmuskelregbarkeit und über Schwangerschaftstetanie). *München. med. Wchnschr.*, 1913, lx, 849.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Having observed that tetany is characterized by an increased mechanical and electrical irritability of the peripheral nerves, and that this disease is particularly frequent in pregnant women, Seitz decided to subject the galvanic irritability of the nerves to an accurate test.

He found that the cathodal closing contraction of the median nerve in non-pregnant women appeared on the average with 1.3 milliamperes, and in only 10 per cent of the cases did it appear below 0.9 ma. In pregnant women, on the contrary, it appeared below 0.9 ma. in 80 per cent of the cases. Therefore, in 80 per cent of all pregnant women there is a slight increase of the galvanic irritability. This reaches the highest degree during labor and disappears gradually during the puerperium. In about 10 per cent of cases during labor the cathodal closing contraction appears at 0.1 to 0.3 ma., that is, there is what may be called a subtetanic condition.

That these results have a certain degree of practical value is shown by the case of a pregnant woman whose symptoms were slight at first and who was considered asthmatic at the time. Later, when muscular symptoms began to appear, pronounced nervous asthma and other nervous symptoms appeared — the result of her subtetanic condition. In her case the cathodal closing contraction of the median appeared at 0.2 ma. The author believes that what is commonly called the nervousness of pregnancy is often really a condition of subtetany — he calls it parathyrotoxicosis. Therapeutically, pantopon has been used with good effect and thyreoidin with somewhat less effect. BORELL.

Gellhorn, G.: Exophthalmic Goiter and Pregnancy. *Am. J. Obst.*, N. Y., 1913, lxviii, 1132.

By Surg., Gynec. & Obst.

Gellhorn discusses the effects that pregnancy has upon exophthalmic goiter and comes to the following tentative conclusions:

1. The complication of pregnancy and exophthalmic goiter, while comparatively slight in some cases, may constitute a grave danger to the life of the mother.
2. If the manifestations of Graves's disease are aggravated in spite of medicinal and other conservative treatment, interruption of the pregnancy is indicated without delay.
3. The quickest and, therefore, best method of interruption is by means of vaginal cesarean section.
4. Spinal anæsthesia is preferable to any other form of anæsthesia in that it reduces the dangers from any operation on patients from exophthalmic goiter.
5. Girls with well-developed hyperthyroidism should be advised against marrying.
6. If Graves's disease has appeared after marriage, conception should be prevented.
7. If vaginal section be performed, tubal sterilization should be added. N. SPROAT HEANEY.

Eckelt, K.: Kidney Function During Pregnancy (Über die Nierenfunktion in der Schwangerschaft). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxiv, 434.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Eckelt tested the kidney function as to the excretion of water, sodium chloride, and nitrogen, in three normal pregnant women and in seven cases with the

kidney of pregnancy, two of which ended in eclampsia. The water, salt, and nitrogen content was determined approximately according to tables and used to determine the balance of metabolism, together with the average values of the nitrogen of the faeces and the water excreted as perspiration. To test the adaptability of the kidney it was overloaded with 1 to 1½ liters of water, 10 gms. salt, and 20 gms. artificial urea, containing 10 gms. nitrogen; the concentration test on a dry diet was also carried out.

The examination of the kidneys of the healthy pregnant women by these methods showed no functional difference from those of healthy, non-pregnant women; neither was any increase in diuresis noted toward the end of pregnancy. The kidney of pregnancy, diagnosed from the high albumin content of the urine and the appearance of oedema during the second half of pregnancy, showed insufficiency in the excretion of water and salt, and functionally resembled the so-called tubular nephritis described by Schlayer. A fixation of the specific gravity such as is peculiar to some forms of nephritis could not be shown.

In both the cases complicated by eclampsia there was a sinking of the salt excretion, which in the future may be regarded as a sign of an approaching attack of eclampsia. Because of the insufficiency of the kidney of pregnancy for the excretion of water and salt, the fluid given should be limited and the diet should be poor in salt. A pure milk diet is not suitable because of its high water content. The results of the cases treated in this way, disappearance of the oedema and fall in the blood-pressure, argue for the correctness of this theory. BIENENFELD.

Stoeckel: Pyelitis in Pregnancy (Pyelitis gravidarum). *München. med. Wchnschr.*, 1913, lx, 2147.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author reports two cases of the above. Examination of the urine of the first case showed infection of the urinary tract with colon bacilli, and a diagnosis of pyelitis was made; the symptoms were very severe and the general condition was bad; the kidneys were very painful on pressure and increased in size. The pregnancy was in the fifth month and continuous irrigation of the kidney for weeks, with intervals of a day or two, resulted in recovery and maintenance of the pregnancy. This case shows that often, in almost hopeless cases, success is attained by irrigation of the kidney. It frequently has to be repeated very often in order to overcome the intoxication by removing the badly infected urine.

In the second case a mistaken diagnosis of perityphlitis, which is very frequently confused with pyelitis, had been made. A single irrigation of the kidney sufficed in this case. Early diagnosis is the most essential thing to success in curing the pyelitis and maintaining the pregnancy. In any febrile condition, with local tenderness on pressure in the region of McBurney's point, and pain in the kidney

region, either on one or both sides, there should be an immediate bacteriological examination of urine removed from the bladder with a catheter. If colon bacilli are found, in pure culture or associated with other bacteria, the diagnosis is tolerably certain; catheterization of the ureters will remove all doubt. It is doubtless true that expectant treatment with rest in bed and regulation of diet often succeeds; but it is just as certain that during the delay of the expectant treatment many cases get so much worse that the kidney tissue itself becomes diseased, and either surgical operation on the kidney becomes necessary or the pregnancy ends in abortion. Success in guarding the kidney from infection and maintaining the pregnancy can only be secured by changing at the right time from the medicinal and dietetic treatment to irrigation of the pelvis of the kidney.

RUNGE.

Essen-Möller, E.: Present Treatment of Eclampsia (Einige Worte über die Eklampsiefrage heutzutage). *Allm. sven. Läkartidn.*, Stockholm, 1913, x, 841. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author gives a short review of the different theories in regard to eclampsia; he believes it is an intoxication originating in the ovum, which should therefore be removed as soon as possible. He points out the fallacies in the arguments of those authors who oppose prompt delivery and believe in going back to old conservative methods of treatment.

In 31 cases he obtained exact information as to the time of the appearance of the first symptoms. The shortest was one day, and the longest eight to nine months, before the onset of the convulsions. In the cases of eclampsia during labor there were distinct symptoms at least 10 hours before delivery. Although he believes decidedly that it is an intoxication, he has seen mild cases recover spontaneously — 25 cases out of 53. He treats the cases according to individual indications; the mild ones expectantly, the severe ones actively. Up until 1908 his total mortality was 9.76 per cent; in 1913, this figure rose to 13.6 per cent. In 63 cases, 42 children were born living and 21 dead; five were dead before birth; one died immediately afterward from a severe malformation. The result in 57 cases was: 15 dead children, or 26.3 per cent; of these, 8 weighed less than 2000 gms.; of the living children, 12 per cent died.

He discusses the prophylaxis and treatment of eclampsia, and says that all cases should be given hospital treatment. He does not commend Stroganoff's treatment, which he says is irrational. He is favorably inclined toward blood-letting, but not decisively so.

BJÖRKENHEIM.

Engelmann, F.: Compromise Between the Radical and Conservative Treatment of Eclampsia (Über den Wert der "Therapie der mittleren Linie" bei der Behandlung der Eklampsie). *Med. Klin.*, Berl., 1913, ix, 1582.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author reports the results of the treatment of eclampsia in the municipal gynecological clinic of

Dortmund. They have decidedly improved since radical early delivery has been given up. Under the old treatment, he lost 3 out of 47 cases, 6.3 per cent; in a series of 28 cases under the new treatment he has lost none. These results correspond to those of the Leipzig clinic. It is not advisable, however, to give up all attempts to influence delivery.

A combination of expectant treatment with rapid delivery gives better results for the child. Of the last 47 viable children in cases of eclampsia, the author lost only 4, one of those from an injury during delivery. This gives a mortality of 9.3 per cent, in contrast with 21 to 41 per cent from the purely expectant treatment.

The author's treatment is a middle course between the extremely conservative and the extremely radical treatment. It is as follows: The patient is isolated and kept free from all external irritation; all operative procedures are carried out under chloroform narcosis. An abundant quantity of blood is immediately withdrawn, followed by infusion; chloral enemata are given at regular intervals. Delivery is hastened by dilatation of the os or the use of the metreurynter; artificial delivery is performed as soon as it can be done without danger.

RUNGE.

Hussey, A.: The Indications for Cæsarean Section, Found in a Series of Forty-Four Cases from the Gynecological and Obstetrical Service of the Brooklyn Hospital. *Long Island M. J.*, 1913, vii, 462. By Surg., Gynec. & Obst.

From a series of 44 cases the author summarizes under nine headings the indications and contra-indications for cæsarean section, as follows:

1. In pelvic deformity obstructing labor, he states that disproportion between the diameters of the head and those of the birth canal is the commonest indication for cæsarean section and in the above series he has operated for this complication 26 times. He describes the degree of disproportion as absolute, when the difference between the diameters of the head in a favorable position and the diameters of the pelvis is so great that engagement cannot take place; relative, when the opposing diameters are such that engagement may or may not take place according to the moldability of the head and the character of the labor; apparent, when an abnormal position prevents the small diameters of the head from engaging with the small diameters of the pelvis. The pelvic diameters most frequently at fault are the true conjugate, the transverse, and anterior posterior of the outlet. He states in a general way that with a true conjugate of $7\frac{1}{2}$ cm. or less and a normal baby the indication for cæsarean section is absolute and with a larger conjugate the indication may or may not arise according to the disproportion that exists, the amount of molding that takes place, and the physical condition of the mother and child.

2. Under the group of mechanical obstruction by diseased conditions of the pelvic soft parts,

the author mentions tumors, cicatricial contractions, and inflammatory thickening of the pelvic soft parts and states that in the 44 cases, he has operated five times for these conditions. He believes that ovarian cysts complicate labor about once in 3,000 cases and advises removing the cyst at the beginning of labor, or if this is impossible, he recommends a cesarean section.

3. In the cases of ventral or vaginal fixation dystocia, the author does not advise cesarean section except when a rapid termination of labor is necessary and suggests in the less urgent cases, the releasing of the band of adhesion by laparotomy and allowing patient to go to term, or the doing of an anterior vaginal hysterotomy.

4. He reports two cases of rupture of the body of the uterus in the series and two cases of contraction ring dystocia.

5. Cesarean section may be indicated in elderly primiparæ, who are having prolonged and ineffective labors, and in whom the conditions of the soft parts are such that forced vaginal delivery would be injurious to the baby. There was one such case in the series.

6. He reports two cases of eclampsia, in which the general condition of the mother necessitated rapid delivery and states that, at the present time, the operation for this condition is sometimes indicated, and that it may be done in the interest of the child, providing the mother's condition is favorable or when there is good reason to suppose that the baby can be saved by no other means and when a condition exists that would necessitate its application in the interest of the mother, irrespective of the eclampsia.

7. He reports four cases of placenta prævia and suggests that cesarean section be used in severe forms of placenta prævia, where the child is in good condition, the mother not infected, the period of uterogestation over eight months, and the condition of the pelvic soft parts such, that easy delivery cannot be accomplished by the vaginal route.

8. The author reports only one case of heart disease in the entire series.

In conclusion, the author says, "When indications for cesarean section exist, we must recognize them promptly, and having recognized them, it is our duty to earnestly urge its claim and to so handle our patients that when the necessity arises the operation may be done with the least possible risk," and further adds that the result of cesarean section does not lie wholly in the hands of the operator, but largely in the hands of the man who has preceded him.

WM. D. PHILLIPS.

Davis, A. B.: Cesarean Section; a Study of a Consecutive Series of Cases. *Am. J. Obst., N. Y.*, 1913, lxxviii, 1017. By Surg., Gynec. & Obst.

Davis reports an additional 46 cases to the series of 147 previously reported cases and studies the results of the combined series of 193 consecutive cases operated by him since 1901. Of these cases,

174 mothers, or 90.2 per cent, including 5 convalescent cases, recovered, while 19, or 9.8 per cent, died. Of the 19 deaths 15 occurred in the first 100 cases. Twelve of the 19 deaths were due to sepsis, 9 of which are ascribed to the attendance prior to the patient's entrance to the hospital. In all, 196 infants were delivered — twins in 3 instances; 164, including 4 still in the hospital, or 84.1 per cent, survived the puerperium; 31, or 16.9 per cent, were stillborn or failed to live; of the 31, 11 were stillborn. The majority of the deaths subsequent to delivery were due to prematurity.

In reviewing the results obtained in the various affections necessitating the sections, the author states that 15 sections were performed for eclampsia; all the patients were either having convulsions or were in coma; 12 were primiparæ; none were in labor, scarcely any of them were at full term. Eleven, or 73.3 per cent, of the mothers recovered; 4, or 26.7 per cent, of them died. Five children were delivered of the 4 mothers who died; 4 of them lived. In all, 17 children were delivered from the 15 mothers; one set of twins and a premature foetus were stillborn; three other babies died during the puerperium, making a combined foetal mortality of 6, or 35.3 per cent. Eleven babies, or 64.7 per cent, were dismissed in good condition.

Three of the cases had a rupture of the uterus in a subsequent labor; in one case both mother and child died; in the other two, both survived. Davis considers that the dangers of a rupture of a section scar is a real danger and that the patient should be carefully watched during pregnancy, and that a section should again be performed at term or in the first part of labor.

N. SPROAT HEANEY.

Davis, E. C.: Report of Cesarean Sections Done During Past Year. *J. M. Ass. Ga.*, 1913, iii, 260. By Surg., Gynec. & Obst.

The author reports that in performing five vaginal cesarean sections during the past year he lost one case from profound toxæmia and ether used in the anæsthetic. He had four abdominal sections without maternal mortality. A premature child delivered of an eclamptic mother was delivered alive but did not survive.

In one case fibroid tumors in the lower uterine segment necessitated the operation; in another a narrow pelvis, which prevented the head from engaging after three days' labor, demanded the operation. Another woman had a Pott's disease, affecting the lumbar, with marked kyphosis and a very narrow inlet. The fourth woman was eclamptic and had a conjugate of only three and one-half inches.

C. H. DAVIS.

McPherson, R.: Treatment of Placenta Prævia by Cesarean Section; When, if Ever, is It Justifiable? *Am. J. Obst., N. Y.*, 1913, lxxviii, 1140. By Surg., Gynec. & Obst.

Of 470 cases of placenta prævia treated in the New York Lying-In Hospital since 1891, 19 cases

since 1905, were treated by Cæsarean section by six different operators. No case had more than two fingers dilatation and all had lost much blood. One mother died, or a mortality of 5.3 per cent. Two children were stillborn and three died before leaving the hospital, a foetal mortality of 5, or 26 per cent. McPherson believes that when the patient is a primipara, whether the placenta is marginal or central, or a multipara, with the placenta central, if the cervix is rigid or not easily dilatable, that cæsarean section is the operation of choice in competent hands and good surroundings, providing that the child is viable and the mother offers the ordinary safe operative risk.

N. SPROAT HEANEY.

Crossen, H. S.: The High, Short Incision for Cæsarean Section. *Interst. M. J.*, 1913, xx, 1143. By Surg., Gynec. & Obst.

The author reports a case in which the high incision was used. The advantages of this incision are as follows:

1. There is less extensive handling of the peritoneal surfaces; hence, less shock and less danger of infection.

2. The incised uterus drops away from the abdominal incision, thus preventing adhesions, which have proven a serious matter in some cases operated on by the usual incision.

This incision cannot be used when there is a possibility of removing the uterus for infection.

EDWARD L. CORNELL.

Benthin, W.: Treatment of Febrile Abortion (Zur Behandlung des fieberhaften Aborts). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxiii, 832. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In view of the widely varying reports as to results from Winter's conservative treatment of retained ovum and remnants of placenta, as well as febrile abortion, especially when hæmolytic streptococci are present, he has had collected the 200 cases of febrile abortion treated according to these principles in his clinic since 1909, and Benthin reports them, with detailed descriptions of the clinical course and bacteriological findings.

The bacteriological examination is limited to that of the vaginal secretion by means of smears on 1½ per cent grape-sugar blood-agar plates and on glycerine blood-agar plates. The blood examination was made in fluid nutrient media, generally with grape-sugar bacilli. Anaërobic bacteria were demonstrated in Burkhardt's tubes by means of Schottmüller's agar culture, modified by Sachs. He shows that active treatment is much more dangerous, even when hæmolytic streptococci are not present, by the results of 152 cases of uncomplicated febrile abortion. The total morbidity was 14.5 per cent, mortality 2.6 per cent; 77 of them were treated actively, with a morbidity of 23.3 per cent, mortality 5 per cent; 42, expectantly, with 4.7 per cent morbidity and no mortality; 33, first expectantly and then actively, with a morbidity of 3 per cent and no

mortality. The prognosis was found to depend to a marked degree on the kind of bacteria present. In the presence of a hæmolytic streptococci, the morbidity and mortality was higher than with a hæmolytic staphylococci, colon bacilli, and vaginal bacilli, but in proportion to the total average it was comparatively low. His 48 cases of febrile abortion infected with hæmolytic streptococci he managed separately, according to whether they were treated inside or outside the clinic, and whether they were complicated or not. The results were as follows: Under active treatment, of 16 uncomplicated cases 1 recovered immediately; 6 after two or three days fever; 2 had pyæmia and 2 parametritis; 5 died, two each of peritonitis and acute sepsis and one of acute septic thrombophlebitis; of three complicated cases one died of pyæmia, one of peritonitis, and one recovered after a long illness. The total morbidity of this group was 62.2 per cent, mortality 36.7 per cent, or, deducting the complicated cases, 56.3 and 31.2 per cent. Of 11 uncomplicated cases, treated purely expectantly, three were slightly sick; of two complicated cases, one was slightly sick and one died. Of seven uncomplicated cases, treated expectantly and then actively, one was severely sick of pyæmia and one of parametritis.

There were no complicated cases treated in this group, so that the morbidity for the expectant and expectant-active treatment was only 27.8 per cent and the mortality none. Outside the clinic, two uncomplicated and two complicated cases were treated actively; the first two recovered quickly, the latter two died. Of five complicated cases of spontaneous abortion treated outside the clinic, expectantly, one was mildly and one severely sick, and two died.

The important question in practice as to whether any harm is done by the expectant treatment, the author answers negatively for some cases; in others he leaves it an open question, considering his one case of pyæmia, and he also leaves undecided the question as to whether active treatment would have been better in this case. He emphasizes the fact that in two-thirds of his cases, under expectant treatment, the uterus was evacuated spontaneously, three times on the first day, five times on the second, and once each on the third, fourth, and tenth days. Moreover, that in the active treatment there was generally a marked change for the worse, while in the expectant treatment, with the exception of the one case of pyæmia, there was rapid decrease in the symptoms which had often lasted for a long time, such as fever, chills, and hæmorrhage. There should always be strict rest in bed, ergot medication, regulation of diet, and avoidance of all injuries, among which examination is counted.

The author thus has a total morbidity of 62.2 per cent and mortality of 36.7 for actively treated cases, as against 48 per cent and 16 per cent for the expectant, if he includes the complicated cases and those treated outside the clinic; if he excludes the complicated cases he gets 56 and 31.2 per cent for the

active cases, and 27.8 per cent and none for the expectant ones.

It is natural that Benthin should regard the results of this last series of cases as a confirmation of the correctness of Winter's teachings. He concludes with a critical review of the work appearing on the same subject from other clinics, but says that their statistics as to morbidity and mortality can not often be compared with his, either because the expectant treatment was not strictly carried out or because the mortality of the cases with hæmolytic streptococci, which is the vital point of Winter's teaching, was not separately reported.

VASSMER.

LABOR AND ITS COMPLICATIONS

Goldstrom, M.: Prognostic Value of Demonstrating Streptococci in the Vaginal Secretion of Women in Labor (Über die prognostische Bedeutung des Nachweises von Streptokokken im Vaginalsekret Kreissender). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxiii, 737.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author examined 902 cases which were admitted to the clinic in labor without any clinical signs of infection. In some of the cases there had been vaginal examinations and attempts at delivery before they were admitted. Aside from the operative cases, the examinations made in the clinic were all rectal. Complicating general diseases, syphilis, and gonorrhoea were excluded. The secretion was taken antepartum from the lower third of the vagina, with Traugott's applicator.

Superficial smears were made on alkaline-agar plates, cultures in alkaline bouillon, and anaërobic cultures in the upper layers of grape-sugar-agar; superficial smears were also made on blood plates. Quantitative conditions were not taken into consideration, since in 12 cases, in spite of the fact that there were pure cultures of streptococci on the first alkali plates, there was no fever during the puerperium. The morbidity was judged only by the temperature curve, axillary measurement, and maximum of 38°. Under these conditions there was no appreciable difference in the course of the puerperium in women without streptococci, and those with hæmolytic or non-hæmolytic streptococci. The prognosis of the puerperium is not dependent on the presence or absence of streptococci in the secretion of the lower third of the vagina antepartum. The danger of a strain of streptococci to its host cannot be determined either from morphological or biological data.

FETZER.

Rouvier, I.: Simplified Directions for Podalic Version by Internal Manipulation in Head Presentations (Formules simplifiées pour la version podalique, par manœuvres internes, dans les présentations de l'ovoïde céphalique). *Bull. soc. d'obst. et de gynéc. de Par.*, 1913, ii, 46.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In internal version in the head presentation there are, according to Rouvier, four points to be consid-

ered in carrying out the operation: the position of the child's head; the location of the physician with regard to the patient; the insertion of the right hand; and the seizing of the right foot. In version in the transverse position, Rouvier proceeds as follows: If the child's breech is to the right, the physician stands at the right of the patient, inserts the right hand and seizes the child's right foot; if the breech is on the left, the procedure is the same except that left is substituted everywhere for right. If it is a case of head presentation, the procedure is as follows: With the occiput to the right, the operator stands to the right of the patient, inserts the right hand and seizes the child's left foot; with the occiput to the left, he stands to the left of the patient, inserts the left hand and seizes the child's right foot.

FRANKENSTEIN.

Stephan, S.: Death from Intraperitoneal Hæmorrhage, During Delivery from a Varicose Nodule at the Angle of the Uterus (Intraperitonealer Verblutungstod sub partu aus einem Varixknoten an der Uteruskante). *Gynäk. Rundschau*, 1913, vii, 657.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author reports a case of the complication described in the title, which was brought to the clinic twelve hours after the patient had first fainted. A probable diagnosis of premature separation of the placenta was considered, so the uterus was emptied by vaginal cesarean section and laparotomy performed afterward. Unfortunately the anæmia was so extreme that the patient died half an hour after the operation.

The author recommends in similar cases, where the diagnosis is somewhat in doubt, that an exploratory laparotomy be performed as soon as possible.

EBELER.

PUERPERIUM AND ITS COMPLICATIONS

Polak, J. O.: The Management of the Interior of the Uterus in Post-Abortal and Post-Partum Infection. *Long Island M. J.*, 1913, vii, 459.

By Surg., Gynec. & Obst.

In a clear and concise way the author shows why every case of post-abortal and post-partum infection should be studied carefully and treated according to the type of infection and the duration of pregnancy; avoiding the use of the curette or any intra-uterine examinations during the acute stage of the infection, except in abortion cases of less than seven weeks when the uterus is retroflexed.

"A study of nearly 2,000 cases of puerperal infection has demonstrated that the endometrium should never be curetted in streptococci infection and that curettement of the placental site is a potent cause of thrombo-phlebitis of the pelvic veins." The author has also observed that peritoneal and parametrical complications are rare in cases in which the interior of the uterus has not been disturbed by digital or instrumental exploration.

"Nature protects the organ against the invading

organisms by the formation of a definite layer of leucocytes and small round tissue cells, which are deposited between the infected area and the underlying normal tissue." He states that the use of the curette in these cases destroys this protective barrier and spreads the infection and he advises as a more satisfactory means of securing uterine drainage, Fowler's position and uterine contraction by means of pituitrin and ergot in full doses, also the use of ice-bags over the uterus.

In a report of 104 cases of puerperal infection, the author states that a hæmolytic streptococcus was recovered thirty-four times; a streptococcus of the non-hæmolytic type ten times; pure streptococci five times; combined growths of streptococcus and staphylococcus ten times; in combination with colon bacillus five; saprophytic bacillus five, and with streptococcus and colon bacillus ten times. Of this series there were three fatal cases, one failing to show any organism in the blood, in another the streptococcus brevis was found and in the third staphylococcus aureus. None of the 34 cases showing a hæmolytic streptococcus were curetted.

WM. D. PHILLIPS.

Ilkewitsch, W. J.: Treatment of Puerperal Sepsis by Intravenous Injection of Distilled Water (Über die Behandlung der Puerperalsepsis durch intravenöse Injektionen von Aqua destillata). *Zentralbl. f. Gynäk.*, 1913, xxvii, 1399.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

This treatment developed from the method of Hume, of Baltimore, who injected intravenously 500 ccm. of a 1 per cent solution of silver nitrate in distilled water, and in the severest cases of sepsis got wonderful results. Ilkewitsch tried the method in 138 cases of puerperal fever, weakened the solution, and finally used distilled water alone, 8 ccm. to a kilogram of body weight. He always observed first a chill and high temperature accompanied by an increase in the erythrocyte count, following which there was an improvement in even the worst cases. He treated 206 cases by this method and among 62 patients with the severest form of septic pyæmia, he had 42 recoveries. If the hæmoglobin content is reduced to 50 per cent and the number of erythrocytes to less than 2,750,000, and if the number does not increase after the injection, the prognosis is hopeless.

HÜFFELE.

MISCELLANEOUS

Donaldson, M.: Some Observations of Blood-Pressures, in Cases of Normal and Abnormal Pregnancies and Labors. *J. Obst. & Gynec. Brit. Emp.*, 1913, xxiv, 133. By Surg., Gynec. & Obst.

During pregnancy there is no increase of blood-pressure, nor is there any fall immediately following delivery. No definite statement as to the value of this observation with reference to collapse in cases of pregnancy complicated by cardiac lesions is made, but the author tends toward the theory that the peripheral circulation has very little to do with

the collapse, but that overstimulation of a damaged heart is sufficient to account for it. In cases of albuminuria of pregnancy, the most striking feature is the high systolic pressure; in the purely toxic cases pressure tends to fall quickly to normal after delivery. At present it is difficult to say how far it is possible to diagnose the presence of a previous renal lesion by the failure of the pressure to fall so low. A rising blood-pressure in spite of treatment is certainly an indication for terminating pregnancy. In albuminuria there is further evidence that the systolic pressure is some indication of the severity of the toxæmia. In pernicious vomiting the pressure was not raised, a fact suggesting that toxin in these cases differs from that of the albuminuric cases. In glycosuria complicating pregnancy the blood pressure showed nothing abnormal.

CAREY CULBERTSON.

Björkenheim, E. A.: Golgi's "Internal Network" in the Placental Epithelium (Golgi's Apparato reticolare interno in den Placentarepithelien). *Arch. f. Gynäk.*, 1913, c, 446.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In 1898, Golgi discovered a network in the protoplasm of nerve-cells which he called the *apparato reticolare interno*. This is now recognized as a structural peculiarity of all cells. Björkenheim's work is concerned with demonstrating them in the syncytium, which had not hitherto been done with certainty.

He used for material three human placenta, after delivery, and a human placenta from the fourth month of pregnancy. The specimens from fresh placenta were prepared by Golgi's arsenic acid method and by Cajal's uranium nitrate method. The details are given in the original article.

In the syncytium, where there are no cell boundaries, there was an angular disc around the nuclei with a clear center and a decided reticular structure, corresponding exactly to the arrangement seen in leucocytes and connective-tissue cells. In the Langerhans cells the network is larger and more clearly defined and the clear area in the center is larger. In the amniotic epithelium, the author observed an arrangement similar to that in the cubic cells of the thyroid gland: the network was here arranged in a circle around the nucleus; the edges of the ring were uneven and showed small projections. Björkenheim believes, with Golgi, that no hypothesis to explain this network should be accepted until sufficient material has been collected.

EBELER.

Wolff, B.: Origin of Amniotic Fluid (Über die Herkunft des Amnioskwassers). *Berl. klin. Wchnschr.*, 1913, l, 1437.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

A review of the teachings in regard to the origin of the liquor amnii and recent comparative experiments in regard to osmotic pressure of the amniotic fluid and the blood serum show that it cannot possibly be a filtrate from the mother's blood. Accord-

ing to Von Polano's experiments, the amniotic fluid is a product of excretion of the foetus. The author comes to the conclusion that the ovum secretes the amniotic fluid, making use, however, of materials taken from the maternal organism, so that its quantity and quality are, to a certain extent, dependent on the character of the nutritive fluids of the mother's body. The chief tissue concerned in its production is the epithelium of the amnion. The kidneys also have a share in it, but to just what extent is uncertain. The direct cause of hydramnios therefore, must be sought in the secretory organs of the foetus, on which diseases of the mother act only indirectly.

If the amniotic fluid is a purely foetal product, malformations such as club-foot and congenital dislocation of the hip cannot be explained by a lack of fluid, but the oligohydramnios itself must be due to an abnormality in the ovum. These experiments in regard to the origin of the amniotic fluid offer further proof of the activity and vital independence of the ovum.

EISENBACH.

Waldstein, E., and Ekler, R.: Proof of the Absorption of Spermatozoa in the Female Organism.
Am. J. Urol., 1913, ix, 529.

By Surg., Gynec. & Obst.

The authors have made a biological study of the fate of the spermatozoa in the female organism after copulation, basing their work on the Abderhalden test for pregnancy.

Rabbits which were used for the experiments were allowed to have coitus and then blood was removed from the females in such a manner as to obviate hæmolytic, which interferes with the reaction. One and a half cubic centimeters of the blood serum were then dialyzed with 0.5 gm. of rabbit testis. After 12 to 14 hours in the incubator the dialyzate was subjected to the ninhydrin, a modified biuret test, the theory being that if the semen was actually absorbed by the female her blood would contain a ferment capable of splitting the non-dialyzable complex testicular proteids into simpler bodies, whose presence would cause a positive ninhydrin reaction.

Control tests showed that there was normally no testis-splitting ferment in the blood of the virgin female and of male rabbits. Having established this point, the authors made 15 tests on the blood of rabbits soon—mostly within 24 hours—after coitus. The results were all positive, and, what is more, many of these results were obtained in the same animals which had responded negatively to the first control series of experiments. In order to prove the specificity of this reaction for testicle protein, the authors made control tests with other substances: three tests with placenta, four tests with muscle, one test with kidney. These controls were all negative.

In response to the possible objection that it is not the absorbed semen but the impregnated ovum that causes the elaboration of this specific ferment,

the authors point out that in the first place the interval after coitus is too brief for the ovum to exert any biological influence upon the mother, as it is not yet brought into any actual biological contact with her tissues, and that, in the second place, they have observed numerous positive reactions in rabbits which did not subsequently become pregnant. Nevertheless, a special study was made with the blood of pregnant rabbits, with the result that of ten cases investigated nine were positive. The reactions in these cases, however, were invariably weaker than those obtained immediately post-cohabitationem.

The authors are not yet clear as to the exact time relations between the coitus-reaction and the pregnancy-reaction. That is, they have agreed that the former begins soon after intercourse and ends probably within two weeks in non-pregnant individuals, and that the latter lasts more than four weeks i. e., throughout pregnancy, and even into the puerperium, but they do not know definitely whether the coitus-reaction goes over directly into the pregnancy-reaction when conception has taken place or whether there is a reaction-free interval in these cases.

The authors do not believe that the reaction of pregnancy is produced by the same cause as the reaction of coitus, for it is unreasonable to assume the constant absorption of semen throughout the entire four weeks. They would rather postulate the existence of a different ferment, produced by the mother in response to the presence in her body of placenta, the basis of the Abderhalden reaction, and foetus, as shown by Polana, which has in common with the antisemen ferment the property of splitting testicle protom. That these two ferments should have this common faculty is not so remarkable when we recall that placenta and foetus arise in part directly from spermatozoa.

Transferring the results of their animal experiments to the human sphere, the authors point out that in demonstrating the existence of a new substance in the body of a woman after intercourse, they have furnished an additional basis for the explanation of those manifest phenomena which were formerly wont to be branded as merely psychic in nature. The medico-legal possibilities of this test, as after rape, etc., are, of course, very great.

A. C. STOKES.

Williams, W. W., and Ingraham, C. B.: Abderhalden's Pregnancy Test. *Colo. Med.*, 1913, x, 367.

By Surg., Gynec. & Obst.

This paper gives a detailed description of Abderhalden's pregnancy test, including the testing of the dialyzers, the preparation of the placenta, and the method of obtaining the blood serum.

The dialyzers are softened by soaking in water then, after receiving 2.5 ccm. of diluted egg-white, are placed in dialyzing vessels, and the dialyzate tested for albumin with the biuret reaction. If impermeable to albumin, they are then tested for

permeability to peptone, using 2.5 ccm. of a 1 per cent silk peptone in the tube. Ten. ccm. of the dialyzate is boiled with 0.2 ccm. of a 1 per cent aqueous ninhydrin solution; a boiling-rod being placed in the tube, and all the tubes boiled for exactly one minute. All the shells, which are equally permeable to peptone, as shown by a violet color after one-half hour, are used in the tests; the others are discarded.

The placenta is boiled and rinsed repeatedly, first with water and acetic acid, later without the acid, the object being to get rid of any extractable ninhydrin-reacting substance, as shown by testing 5 ccm. of the filtrate with 1 ccm. of a 1 per cent ninhydrin solution. When there is no reaction the placental material is ready for use and may be kept indefinitely if treated carefully.

Fifteen to twenty ccm. of blood is withdrawn from the vein of the patient, allowed to clot spontaneously, and the serum only used in the test. The serum should be free from substances which react with ninhydrin, for this reason it is preferable to take the blood during the fasting period, before breakfast; it should be free from hæmoglobin and should contain no formed elements.

In the test, three dialyzing shells are used; to one is added 0.5 gr. of placenta and 1.5 ccm. of the serum to be tested; to the second 1.5 ccm. of the serum; and to the third 0.5 gr. of placenta and 1.5 ccm. of distilled water. The shells are then placed in dialyzing vessels and the shell and vessel contents covered with a layer of toluol to prevent evaporation and contamination. They are incubated at 37° C. for 16 hours and the dialyzate then tested with ninhydrin solution, no tube except No. 1 showing any color, although, occasionally, the second tube may show a faint reaction.

The authors made 27 tests on 21 cases: six definitely pregnant, seven indefinite cases, and eight known definitely to be non-pregnant; after using all necessary precautions and re-testing the cases where hæmolysis had occurred, the test was found wrong in only one case.

The reaction should be positive in pregnancy in the fifth and sixth week and until ten to fourteen days post-partum. Where there is protein catabolism, breaking down of the tissue, absorption of exudates and transudates, carcinoma, sarcoma, purulent processes, and hæmorrhage, the serum may react with ninhydrin and confuse the test.

D. H. BOYD.

Sattler, R.: The Prophylaxis of Ocular Birth Infection and Venereal Diseases. *Lancet-Clin.*, 1913, CX, 640.

By Surg., Gynec. & Obst.

The author calls attention to the close affiliation of ophthalmia neonatorum, which is one of the most fatal causes of infantile blindness with gonorrhœa, and believes that the reduction of the true specific cases cannot be achieved through ocular prophylaxis alone, but only through more widely distributed and easily available information regarding the

treacherous dangers of gonorrhœa. He suggests: (1) That among the legitimate married classes, if proof is at hand, that the father was the carrier of the mother's and infant's infection, he should be brought before the local health officer in order to impress forcibly upon his mind the enormity of his misdeemeanor. (2) That the Board of Health should compel the prompt registration of every ocular birth inflammation or contamination, and make Crede's prophylactic management compulsory for every case in public lying-in hospitals and outdoor obstetrical service. He considers Crede's prophylaxis the best and most successful means of stamping out an imminent ocular contamination and, as proof, calls attention to the great reduction in the total number of ocular birth inflammations since this method has been adopted. Among the prophylactic agents, he considers the silver salt the safest, and far above its substitutes, argyrol, etc. This agent, he recommends in every particular case, as he has met with but few harmful consequences in its use.

He considers the possibility of pyogenic organisms being forced into the eyes through a patulous nasal duct from the nasal cavity, which is a larger and easier receptacle for the longer lodgment of infectious pus during protracted labor.

ALEXANDER W. SCHMITT.

Tucker, B. R.: Birth Trauma in Its Causative Relation to Epilepsy and Insanity. *Virg. M. Semi-Month.*, 1913, xviii, 448.

By Surg., Gynec. & Obst.

The author states that in the pathology of epilepsy three points must be borne in mind: First, to have epilepsy there must be a brain structurally defective, and in birth trauma cases there is usually found definite evidence of local compression, hæmorrhage, or cyst formation; second, repeated convulsions may cause dilated blood-vessels, increase in the neuroglia elements, atrophy of convolutions, punctate hæmorrhages, and local oedema. The third element in the pathology, according to Turner, is in the blood-vessels, and consists of intravascular clotting, either formed by masses lying free in the vessels which are probably an amalgamation of blood-plates, or hyaline material formation, or finely granulated debris, or fibrin threads.

It must be remembered that many cases of birth trauma of more or less severity are not followed by epilepsy or insanity and that, on the other hand, both of these conditions may appear from other causes in individuals who present evidence of birth trauma. The author gives a brief history of 15 cases in which birth trauma was the probable cause of the epilepsy.

C. H. DAVIS.

Winn, J. F.: Intracranial Traumata at Birth; Their Interest to the Obstetrician. *Virg. M. Semi-Month.*, 1913, xviii, 445.

By Surg., Gynec. & Obst.

The author estimates that in the past ten years there have been at least 64,240 deaths from birth

trauma. This is based on the mortality statistics for the "Registration Area" of the United States for the year 1910. He states that Schultze, in a study of this subject in 1877, came to the conclusion that 5 per cent of children are stillborn and that 1.5 per cent die very soon after birth as a result of injuries at birth.

In conclusion, the author believes the following deductions are warranted, and, in view of the very high mortality rate and the serious foetal morbidity, he would enter an earnest plea for their universal adoption.

1. The absolute necessity for the routine practice of pelvimetry and foetometry, several weeks before term when possible, and again at the time of labor, on every primipara and likewise every multipara with a history of a dystocia or a stillborn child.

2. An accurate diagnosis, if possible, of the presentation and position of the child prior to labor, and certainly when labor has begun, coupled with a thorough knowledge of the mechanism of labor in contracted pelvises.

3. The cultivation of that watchful expectancy necessary for recognizing the indications for intervention when the child is in jeopardy, not forgetting the welfare of the mother.

4. A more intimate acquaintance with the indications for, and the correct application of, the forceps; and the dictum that forceps should never be used to save the physician's time.

5. That the failure to remember that the sudden and prolonged pressure of the forceps results in dangerous and murderous compression of the child's brain; and that the unskilled and indiscriminate use of the forceps is oftener the cause of intracranial hæmorrhage than the rather infrequent high degree of pelvic contraction.

6. That the routine and careful study of the foetal heart-sounds will eventuate in the reduction of the mortality and morbidity dependent on cerebral compression and hæmorrhage.

7. That the more general resort to episiotomy when the head is unduly compressed by a resistant perineum, will likewise reduce the number of asphyxiated and crippled infants. C. H. DAVIS.

Frazier, C. H.: Surgical Aspects of Birth Traumatism.

Virg. M. Semi-Monthly, 1913, xviii, 452.

By Surg., Gynec. & Obst.

The author believes the most significant feature of intracranial hæmorrhage of the new-born is the fact that the hæmorrhage is almost invariably subdural, in contradistinction to adult cranial hæmorrhages which are for the most part extradural. This is probably due to the fact that the dura is much more closely adherent to the infant's skull. Autopsy records indicate that the clot is more apt to spread over the parietal rather than the occipital or frontal lobes, and into the middle rather than the anterior fossa at the base.

The location of the hæmorrhage is most important. The symptoms of pretentorial hæmorrhage

are: Extreme restlessness and spasm; rigidity of the extremities; epileptic-like twitchings of the face, arms, and legs; lowered pulse and respiration; rapid rises in temperature, increased reflexes; bulging of the fontanelles; disturbances of the pupil, etc. With the peribulbar type the baby is usually in a somnolent condition with cyanosis of the face, head and hands, pulsating fontanelles, irregular breathing, and sometimes convulsions. In all suspicious cases, lumbar puncture and puncture of the subdural spaces on both sides should be resorted to.

C. H. DAVIS.

Fuchs, H.: Narcosis and Anæsthesia in Childbirth.

Universal M. Rec., 1913, iv, 481.

By Surg., Gynec. & Obst.

Circumstances combining to establish the use of chloroform in normal labor to establish narcosis are:

- (1) Use of minimal quantities of the anæsthetic;
- (2) remarkably quick awakening;
- (3) slight or no after-effects.

Tolerance of chloroform during labor is the result of (1) increased gas exchange in the lungs; (2) increased driving power of the heart; and (3) rapid escape of poison through bleeding.

In the opinion of the writer there is an important sphere of usefulness for chloroform in normal delivery; namely, the so-called narcosis *à la reine* — chloroform inebriation. This is brought about by careful administration to maintain the stage of hypalgesia or analgesia which normally precedes the stage of excitement. The success of the properly conducted chloroform inebriation is of such a nature that not only are the pains not felt, but usually there is a loss of memory of the severe pains.

Ether, as a help in labor, is far superior to chloroform. It diminishes the pains far less and interferes with the abdominal efforts hardly at all.

Pantopon given hypodermically, effects psychic calm and lessens the pains felt without any noticeable deleterious influence on the frequency, intensity, and duration of the pains. Its effects on the child, however, may result in deep somnolence of the new-born.

The analgesic action of scopolamine-morphia is peculiar in that the pains are perceived at the moment but leave no memory picture.

Fuchs concludes, "We are still far from the goal of perfect anæsthesia which shall satisfy the rule *non nocere*."

D. L. BORDEN.

Bosman-de Kat Angelino, I., and Margot, A. J.: Fate of 740 Children with a Birth Weight of Less Than 3,000 Grams (Untersuchungen über das Schicksal von 740 Kindern mit einem Geburtsgewichte von weniger als 3000 Gramm). *Ztschr. f. Säuglingschutz*, 1913, v, 243.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In the author's treatment of the above cases, when the temperature sank the children were put into a warm bath. The incubator was used only when the general condition was bad, not on account of low weight alone. The nourishment consisted

of mother's or nurse's milk; when this could not be obtained, modified buttermilk was substituted.

Almost all the children died who were born in the clinic, kept in the incubator, and weighed less than 1600 gms. Of children born outside the clinic, some lived who showed birth weights as low as 1200 gms. Of the boys born in the clinic, 27.8 per cent lived; of the girls, 54.5 per cent. Of those born outside the clinic, 40.9 per cent of the boys and 33.3 per cent of the girls lived. Of all the 175 children who were put in the incubator, 105 died in the clinic, 25 outside, 33 (25.4 per cent) are still alive, and 12 were lost sight of. Of the 565 children who were not kept in the incubator, 52 died in the clinic, 141 outside, 341 are still living (1911), and 31 are unknown.

HIRSCH.

Donnell, R. E.: Two-Headed Fœtus. *J. Mo. St. M. Ass.*, 1913, x, 208. By Surg., Gynec. & Obst.

The author reports a case of an unmarried girl of sixteen giving birth to a two-headed male fœtus (*dicephalus dibrachius diauchenos*) weighing about 8½ pounds. Labor was practically normal, L. O. A., except that after delivery of the first head it required considerable traction to deliver the second. Donnell then gives a complete description of the fœtus. The heads by measurement showed that they were actually of the same size and perfectly normal; the faces were identical and the body apparently normal. At autopsy two entirely independent hearts were found enclosed in one pericardium; there was one set of lungs, two livers, and two gall-bladders. The small and large intestines were about twice as long as usual. The skiagram showed two separate and complete spines while the remaining bony structure was apparently normal.

ALEXANDER W. SCHMITT.

Biener, L.: Lithopedion in the Mesentery for Twenty Years (Lithopädion im Mesenterium durch 20 Jahre getragen). *Monatschr. f. Geburtsh. u. Gynäk.*, 1913, xxxviii, 428.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In an autopsy on a 56-year-old woman, a lithopedion was discovered which was connected only with the great omentum. It had grown until the fifth month, and must have been lying in the abdominal cavity for at least 20 years. Microscopically, aside from bone, only striped muscle and elastic fibers could be demonstrated. According to Küchenmeister's classification this was a true lithopedion. Microscopical examination of the genitalia showed beyond a doubt that it was a ruptured pregnancy of the ampulla of the left tube.

KNOOP.

Foges, A.: Use of Pituitrin in Obstetrics (Pituitrinanwendung in der Geburtshilfe). *Arch. f. Gynäk.*, 1913, xci, 455.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

From his study of the material in the Wertheim Clinic the author comes to the following conclusions:

Pituitrin is indicated as a means of stimulating pains at the end of the first stage and throughout the second stage. The conditions for the use of pituitrin are about the same as those for the use of forceps. Pituitrin is also indicated for breech presentations and placenta prævia after version or metureuryasis; earlier in labor it may cause complications. A combination of pituitrin and ergotin is useful in post-partum hæmorrhage. For this purpose it should be given intramuscularly. It is an excellent prophylactic preventive of hæmorrhage in cæsarean section. Schmidt recommends that for this purpose it be given by direct injection into the musculature of the uterus immediately after the extraction of the child.

BORELL.

Heynemann, T.: The Measurement of the Pelvis with Röntgen Rays and their Practical Use in Obstetrics (Die Beckenuntersuchung mittelst Röntgenstrahlen und ihre praktische Bedeutung für die Geburtshilfe). *Prakt. Ergebn. d. Geburtsh. u. Gynäk.*, 1913, v, 237.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Stereoscopic pictures are distinguished from those that are limited to the most interesting plane of the pelvic inlet. The author discusses the latter when taken from short and long distances. When they are taken at close range there is an enlargement and distortion of the drawing, for it is hardly possible to keep the tube in an exact central location and the plane of the pelvic inlet exactly parallel to the plate. The enlargement is less if the patient is placed in the abdominal position, with the plate placed on the body and the tube behind. Both these disadvantages are decreased when the picture is taken from a distance. The best distance from the focus to the plate is 210 to 260 cm. In practice, 0.7 cm. should be subtracted from the size of the picture to get the real measure of the diameter. When taken at short distance a reduction is necessary in order to get the correct measurement.

Stereoscopic pictures are true orthomorphic images. The best distance from the focus to the plate is 60 cm. in non-pregnant and 200 cm. in pregnant cases. This should be decreased 6.5 cm. between the first and second pictures. These pictures give a good general view of the pelvis, but cannot be substituted, for obstetrical purposes, for a picture of the pelvic inlet taken at long distance. Their greatest value is in exact measurements of the pelvis. By the Mackenzie-Davidson method the desired diameter can be obtained exactly, but the method is complex and difficult, so that it is questionable whether it can be used in general practice. The goal to be attained is to get the pelvic measurements direct by the use of the stereoscope. Pulfrich succeeded in principle; but the practical clinical usefulness of his apparatus has not been sufficiently demonstrated. No way has as yet been discovered to utilize the röntgen rays for determining the size of the child's head.

WÜSSNER.

GENITO-URINARY SURGERY

KIDNEY AND URETER

Geraghty, J. T., and Plaggemeyer, H. W.: **The Practical Importance of Infantile Kidney in Renal Diagnosis.** *J. Am. M. Ass.*, 1913, lxi, 2224.
By Surg., Gynec. & Obst.

This interesting and important contribution is based on a study of eight cases, three obtained at autopsy, among 3,940 from the pathological department of the Johns Hopkins Hospital; one case in a cat from the experimental animal laboratory; two cases in which the condition was discovered at operation; and two clinical cases.

The condition has attracted very little attention and is usually omitted from classifications of kidney anomalies, as it cannot be recognized by the ordinary methods of examination. Papin, in his very complete classification of kidney malformations, mentions this type of organ, and in 1911 McArthur reported a case which died from renal insufficiency following nephrectomy for tuberculosis, and at autopsy an infantile kidney was found on the opposite side. In this case the ureters had been previously catheterized, and a perfectly clear, apparently normal urine obtained from the insufficient kidney. The kidney is, therefore, a great menace to the surgeon in case of disease of the opposite hypertrophic kidney.

Three of the cases reported are of particular interest—one in which an exploratory operation revealed the condition, and two in which the anomaly was recognized clinically and operation refused.

A man, aged 30, with a diagnosis of tuberculosis of the right kidney and an infantile left kidney was admitted to the hospital. He had a history of urinary symptoms of two years' duration. Tubercle bacilli were demonstrated in the urine, but the prostate, seminal vesicles, and epididymes were normal. The bladder was so contracted that ureteral catheterization was unsuccessful. The total renal function, estimated by phenolsulphonephthalein, showed an excretion of 36 per cent for one hour. The definite reduction in the total function suggested the possibility of a bilateral lesion, and a double exploratory operation was advised. The left kidney was first exposed, and discovered to be about one-fourth the size of a normal kidney, while in every other respect the organ seemed normal. There were no perirenal adhesions; the surface was smooth and the consistency normal; and the ureter showed no thickening or induration suggestive of tuberculosis. In view of the reduced total renal function and the presence of an infantile kidney on the left, it seemed probable that tuberculosis was present on the opposite side. If the hypertrophied

right kidney was tuberculous, it was also evident that nephrectomy could not be performed because of the deficient kidney on the left; consequently the right kidney was not explored.

The patient was seen again three months later. His general health had been fairly well maintained. The urine was quite cloudy from pus, and the total renal function, as estimated by phenolsulphonephthalein, showed an excretion of 25 per cent, which was a decrease of 11 per cent since the previous examination. It seems probable that the tuberculous process of the right kidney is causing a decrease of the total function, because of the inability of the left kidney to undergo compensatory hypertrophy.

Another man, aged 27, with tuberculosis of the right kidney and an infantile left kidney was admitted with urinary symptoms of ten months' duration. Tubercle bacilli were found in the urine. After catheterization of the ureters and estimation of function, the urine being collected for one-half hour, gave the following results: Right kidney—80 ccm., cloudy; microscopically, pus and many tubercle bacilli; phenolsulphonephthalein, approximate time, five minutes; excretion, 30 per cent, for one-half hour. Left kidney—4 ccm., clear; microscopically, negative; phenolsulphonephthalein, approximate time, ten minutes; excretion, 8 per cent for one-half hour.

In order to confirm the preceding findings, catheterization was repeated later with almost identical results. The total function, as estimated by phenolsulphonephthalein, showed an excretion of 35 per cent for one hour, following intramuscular injection. Examination by röntgen ray was negative for stone, but showed a kidney shadow in the left side, not quite half as large as the shadow on the right.

The normal character and color of the urine, the small amount secreted on the left side, the relatively high area concentration, and the small kidney shadow make the diagnosis of infantile kidney probable. Furthermore, the right kidney, although definitely tuberculous, still retained a function equal to or even greater than that of a perfectly normal kidney, which indicates that, previous to the onset of disease in this kidney, it was hypertrophic.

Another case was of double ureter and pelvis with hæmaturia on right side and infantile kidney on the left side. Following a severe blow over the region of the right kidney the patient had noticed blood in his urine, which continued up to the time of the examination. The urine was of a distinct wine color, and, on cystoscopic examination, a stream of bloody urine is seen issuing from the right

ureter. Catheterization of the ureters was performed and functional estimation made by means of phenolsulphonaphthalein, the urine being collected for one-half hour. The results of the examination are as follows: Right kidney—function free and rapid; bloody, microscopically negative, except for red blood-cells; urea, 1.2 per cent; phenolsulphonaphthalein, approximate time, five minutes; excretion, 35 per cent for one-half hour. Left kidney—function slow; about one-eighth the amount of that on right; clear, good color; microscopically, negative; urea, 1.2 per cent; phenolsulphonaphthalein, approximate time, five minutes; excretion, 4 per cent for one-half hour.

The preceding examinations were repeated three times, with practically identical findings on each occasion. Pyelography, using 15 per cent collargol, showed, on the right side, a double ureter, extending from the crest of the ilium and ending in two apparently normal pelves rather widely separated. The injection of 7 ccm. into the left kidney pelvis produced definite pain, and pyelography showed an irregular, small, indefinite pelvis. Estimation of the total renal function was normal, there being an excretion of 50 per cent for one hour, following intramuscular injection of phenolsulphonaphthalein.

In this case, on the right side, which is the source of the hæmaturia, there are two separate kidneys, or more probably a large bifid kidney, which has seven-eighths the total function. On the left side there is a kidney which secretes urine, small in amount, microscopically and chemically normal, and with a high urea concentration, which is equal to that of the right kidney. The function, however, is so low that it is extremely improbable that it could maintain life. The practical importance of recognizing the deficient kidney in this case needs no comment.

The authors make a significant observation in finding that in the three cases in man in which the weight was obtained, it was in every instance 40 gm., or one-fourth the weight of a normal kidney, and they suggest that this uniformity in the size and weight of the infantile kidney may indicate an embryological explanation for the anomaly.

The authors summarize the diagnostic points in recognizing the presence of an infantile kidney as follows:

1. When disease is present in the larger, hypertrophied kidney, the total function, as estimated by phenolsulphonaphthalein, is decreased, and the function of the diseased kidney is usually greater than the function of the supposed healthy kidney.
2. The function of the infantile kidney shows marked decrease, although the urea percentage and general character of the urine is normal, while the amount of urine secreted is relatively small.
3. Pyelography is of doubtful value, since the size of the kidney pelvis is usually not a reliable index of the size of the kidney.
4. In persons not too stout it may be possible to secure röntgen-ray shadows, showing the pres-

ence of a diminutive kidney. In Case 7 considerable help was obtained from the röntgen ray, which showed a very small kidney shadow, less than half that of the opposite side. This, taken in conjunction with the functional findings and the character of the urine, was of considerable diagnostic aid.

FRANK HINMAN.

Thomas, G. J.: Report of a Case of Pelvic Kidney; Diagnosis Before Operation. *Ann. Surg.*, Phila., 1913, lviii, 809. By Surg., Gynec. & Obst.

The author reports the case of woman 32 years old who for one year had suffered from attacks of pain in the lower abdomen, accompanied by tenderness in the left side of the pelvis and frequent micturition.

She had never menstruated and, on examination, no sign was found of uterus, tubes, or ovaries. The vagina was one inch in length and there was a rounded mass, the size of an orange and tender on pressure, situated high in the left inguinal fossa. Because of the congenital anomaly of the pelvic organs, ureteral catheterization, injection of colloidal silver, and radiography were performed. The catheter could be passed into the left ureter for 5 cm. only. The shadow of the kidney pelvis appeared in the left side of the bony pelvis; the right kidney was normal in size and position. The left kidney was removed by Mayo. It lay, with the pelvis pointing upward and inward, in the hollow of the sacrum, to the left of the median line; it was hydronephrotic and infected. The length of the ureter was 4 inches. Two or three renal arteries arose from the left common iliac about one-half inch below the bifurcation of the aorta.

The case illustrates the value of radiography in the diagnosis of ectopic kidney. HORACE BINNEY.

Allen, L. W.: A Case of Bilateral Hæmaturia Cured by Injection of Whole Blood. *Am. J. Surg.*, 1913, xxvii, 465. By Surg., Gynec. & Obst.

The author reports a case of hydronephrosis with bilateral hæmaturia, in which the bleeding was checked immediately by the injection of whole blood.

The patient, a female 27 years of age, had complained of pain in the left side and lumbar region for one year. Hæmaturia had been present one month, but there had been no chills or fever, nausea or cough. The physical examination was negative, the urine contained many blood-cells, but was otherwise normal. Radiograms made before ureter catheterization and with catheters *in situ* revealed no obstruction in the ureters, but disclosed a right hydronephrosis. Catheterized urines showed blood-cells in both, but no pus or bacteria; hæmoglobin, 30 per cent; coagulation time, four minutes.

Twenty ccm. of blood taken from the patient's sister were injected, immediately after withdrawal, into the cellular tissue beneath the breast four days after ureter catheterization. The urine became

clear in 20 hours and remained clear; a week later the coagulation time was $2\frac{1}{2}$ minutes, hæmoglobin, 45 per cent.

After the patient spent two months in the country, hæmoglobin had risen to 80 per cent; thus transforming the case from a poor to a good operative risk, and although she still had the pain in her left side the patient refused operation.

In commenting on the case the author raises the question as to whether hæmaturia in hydronephrosis is due to a concomitant condition of the blood, to which congestion and œdema are added, or whether it is a local condition entirely.

He suggests the possibility that the injection of whole blood modifies the coagulability of the blood sufficiently to prevent leakage; also, that the bleeding in some cases of hydronephrosis is due to a change in the blood constituent and that in such cases the hæmaturia will yield to injections of whole blood, homogenous serum, and the like.

In idiopathic hæmaturia there would seem to be even greater reason for trying such injections before resorting to nephrectomy, and in all cases where there is a very low hæmoglobin per cent, preparatory to a later operation. Should it be found as efficient as human blood serum, the simplicity of its use would recommend its more frequent employment.

H. G. HAMER.

Halle, N.: A Case of Renal Cancroid (Sur un cas de cancroïde rénal). *Cong. de l'ass. franc. d'urolog.*, Par., 1913. By *Journal de Chirurgie*.

A neoplastic kidney was removed by Dujarier in a woman of 39 without any previous urinary history. The operation was incomplete because of the invasion of the renal vein and the lumbar glands. The patient recovered from the operation, but died three months later from generalized metastases. The kidney was the size of the head of a foetus; the pelvis was dilated and transformed into a closed pouch, filled with a turbid bloody liquid containing a mass of soft, white, caseous fragments. The pouch was empty in the lower part, and filled above with a large, infiltrating, ulcerous, friable neoplasm. The part of the renal tissue that was conserved in the upper extremity and the walls of the pelvis was filled with secondary neoplastic nodules, which were white and either hard or soft. The orifice of the ureter was not dilated; catheterization was impossible because of an adhesion of the ureter to an anomalous branch of an artery, that was the cause of the congenital uronephrosis. The histological study of the renal liquid, the free fragments of the main tumor, and the secondary nodules gave the same results.

It was a pavement epithelioma. The surrounding connective tissue and the hilus were invaded by epithelial toxins, localized especially in the sheaths of the nerves and vessels. The walls of the renal cavity at the points not involved in the new-growth showed the ordinary chronic inflammatory lesions of uropyonephrosis, with interesting epithelial

changes; keratinization of the epithelium in the region of the neoplastic nodules.

The conclusion is that congenital uronephrosis resulted from adhesion of the ureter to an anomalous branch of the artery, followed by pyonephrosis, then secondary neoplasm of the pelvis and of the upper calyx, which was a cancrroid with multiple secondary nodules, and extensive invasion of the vascular and lymphatic connective tissue.

Renal cancrroid is identical with vesical cancrroid in its etiology (chronic inflammation), and in its anatomical characters, being an infiltrating tumor with rapid ulceration, pouring numerous necrotic fragments into the urine, which have an absolute diagnostic value; it is also identical in its clinical course and great malignancy. This gives a very clear-cut picture of these urinary tumors, which are not rare either in the bladder or the pelvis. The demonstration of pathological products of ectodermal origin in the urinary mucous membrane seems to contradict the doctrine of cellular specificity, since embryology teaches that the urinary passages originate from the hypoblastic and mesoblastic layers. The hypothesis of dysembryoplasty may explain these lesions in a circumscribed and limited form in the upper ureter and pelvis. Diffuse leucoplasia of these parts may be understood, too, if we admit the complex structure of the mesoderm from endodermic and ectodermic elements, as some embryologists do. But ectodermal growths in the bladder, an organ of purely endodermal origin, are inexplicable. The term inflammatory epithelial metaplasia does not take into account these peculiar facts.

J. DUMONT.

Brewer, G. E.: Observations on Acute Hæmic Infections of the Kidney. *Am. J. Urol.*, 1913, ix, 549. By *Surg., Gynec. & Obst.*

The author accredits Albarran, Pernice, and Scagliosi for demonstrating hæmic infections of the kidney, having their origin in the renal parenchyma of micro-organisms conveyed there directly. Israel, in 1891, called attention to the possibility of grave renal suppurations, due to micro-organisms entering the blood current from comparatively mild local infection, such as furuncles, paronychias, and carbuncles. Jordan later reported twelve cases in which the original source of infection was definitely traced to such insignificant peripheral lesions.

Reviewing his first series of experiments, the author shows that in none of the control animals which had received a moderate dose of pathogenic bacteria directly into the circulation without other injury did a surgical lesion of the kidney develop. Of 16 animals which, in addition to the inoculation, received an injury to one kidney, 5 showed no lesion, or only hyperæmia and parenchymatous degeneration; of the remaining 11, all developed surgical lesions of the kidney; in 8 they were unilateral and limited to the injured kidney; in 3 they were bilateral; in 1 of the bilateral cases the lesions were practically equal in extent and severity; while in

the other 2 the lesions in the uninjured kidney were mild in character, and the animal undoubtedly would have recovered under favorable conditions.

In the second series of cases the author illustrates the fact that anæmia and passive hyperæmia so lower the resistance of the organ to a blood infection as to result in definite surgical lesions. In connection with this he recalls the experiments of Lucas and Bristow-Opitz, who demonstrated that under conditions of increased pressure in the renal pelvis and ureter the renal circulation was greatly diminished, which explains the marked susceptibility to infection in cases of hydronephrosis.

In a number of other experiments undertaken to determine the effects of small inert emboli in the production of surgical lesions by means of blood infection the minute seeds of blue moss were employed. In 9 instances these were injected into the general arterial circulation and the animal subsequently inoculated, as in other experiments. All of the dogs died: 6 of them from symptoms of shock, probably due to cerebral infarcts; 1 from acute hæmorrhagic pancreatitis—it also showed a very few renal infarcts, but there were no evidences of sepsis. It is probable in these cases that only a few seeds reached the kidney, and the damage done was not sufficient to lower its resistance in any great degree.

A review of the microscopical study of lesions produced in these experiments shows that definite lesions, when present, were found identical with those found in our clinical hæmatogenous infections. In most instances they were found to be due to a plugging of the small arteries and capillary vessels with groups of the organisms. These minute emboli are later surrounded by an encircling zone of round-cell infiltration. If the process is allowed to go on, the bacterial emboli are rarely recognized until areas of necrosis and purulent infiltration are found. At a still later stage many of these collections of pus coalesce, forming larger parenchymatous abscesses, which may rupture through the capsule, giving rise to a perinephritis.

The author divides the symptomatology into three types: First, the hyperacute, or fulminating, which is so virulent that it proves fatal in a large number of instances long before any definite renal symptoms have time to develop. In this type the clinical picture is one of an acute general infectious disease, with few or no local manifestations. The second type is somewhat milder than the one just mentioned, but it also has a grave prognosis. This type is often recognized only after complete destruction of the kidney, and seriously interfered with functional activity of the other through toxic degenerative changes. The third, and milder type, which almost invariably recovers spontaneously without serious damage to the renal parenchyma, is of interest to the surgeon chiefly for the reason that it furnishes a rational explanation for so-called idiopathic pyelitis, and also for the reason that it accounts for certain ephemeral rises of temperature observed after surgical operations.

In the first group, or the fulminating type of the disease, early nephrectomy offers the only chance of life to the patient. The author has observed 16 cases of the severe type of unilateral infection: of these, 2 were untreated, and both died within twelve days; 4 were treated by nephrectomy and drainage, all dying shortly after operation; ten were treated by early nephrectomy and recovered. In the second group early decapsulation will almost always abort the process and save the kidney. This relieves the acute hyperæmia and favors the early inauguration of the processes of repair. The writer has operated on perhaps eighteen or twenty cases of this type, and while there was no post-operative death in the series, on one occasion he was obliged to perform a secondary nephrectomy for advancing sepsis.

Regarding the third, or mildest type of the disease, all that is necessary in regard to treatment may be summed up in three words—rest, water, and urotropine.

IRWIN S. KOLL.

Hicks, P.: On the So-Called Movable Kidney Disease; A Reply. *Practitioner*, Lond., 1913, xci, 854.
By Surg., Gynec. & Obst.

The author, replying to a previous article published by Monod, states that he believes that nephroptosis is to be accepted as a part only of the general splanchnoptosis which will develop sooner or later, and that, in his opinion, nephroptosis is not a mere symptom, but is even the cause and origin of symptoms, the earlier stages; i.e., the lesser degrees of nephroptosis causing more direct kidney symptoms. The author believes in nephropexy, and although he admits the operation is often performed with undue haste and on imperfect knowledge, he is equally sure that some cases respond splendidly to operation in which all previous treatment has failed.

Believing as he does that nephroptosis is only a part of the general visceral ptosis, the author thinks that attention should be especially directed to the etiology and early diagnosis of this condition, and, more important than all, to preventive measures. These would consist in proper exercise and development of the abdominal muscles in the young, and freedom from downward pressure produced from any cause. Measures to restore the tone and supporting power of the abdominal muscles should be enforced in cases of visceral ptosis which have their origin in pregnancy and labor.

H. L. SANFORD.

Murard, J.: Decapsulation of the Kidney; Anatomical and Physiological Study (La décapsulation du rein. Étude anatomique et physiologique). *Lyon chir.*, 1913, x, 347.
By Journal de Chirurgie.

Murard's work shows the result of experimental research on the rabbit and the dog. His conclusions, which are given herewith, are in accord with those of other experimenters. Complete removal of the capsule is easy. After it is removed there remains

a thin layer of connective tissue surrounding the kidney, from which the capsule is regenerated; but this is anatomically distinct from the capsule. Decapsulation causes some injury to the most superficial tubules, but these lesions are slight, and practically the operation may be regarded as harmless.

After decapsulation a new capsule forms very rapidly; by the tenth day it is as thick as the normal capsule, and later it becomes thicker and harder. This new-formed capsule has the same structure as the normal capsule, with the exception that the fibrous bundles are less regularly arranged. Contrary to the opinion of d'Albarán and Bernard and of Tuffier, Murard has never seen this regeneration of the capsule accompanied by sclerosis of the renal parenchyma. There is no doubt that vascular anastomoses are produced between the kidney and the periphery, but these anastomoses are slight, not well-developed, and have no functional importance.

From the point of view of increasing the circulation, decapsulation is a useless operation. Soon after decapsulation the kidney seems to increase in volume, and becomes softer. These changes in form and consistency result from the fact that the kidney, no longer being restrained by the capsule, becomes gorged with blood. The increase in weight, 3 to 4 gr. in the dog, confirms the increase in the quantity of blood circulating in the kidney.

The study of renal function after decapsulation shows a slight polyuria with an increased amount of urea; but these changes, which take place in both kidneys, are slight and of short duration. Clinical experience seems to indicate that in man the effect is more important and less transitory. The new formation of vessels does not seem to play any part in this polyuria which takes place immediately; it must be attributed either to renal hyperæmia, which follows the decortication, or to a hypothetic action of the sympathetic nerves of the gland.

C. LENORMANT.

Vincent, W. G.: A New Kidney Cushion; A Two-Compartment Air Cushion, Designed Particularly for Use in Kidney, Upper Abdominal, and Neck Operations. *Med. Rec.*, 1913, lxxxiv, 1035. By Surg., Gynec. & Obst.

The author presents a new kidney cushion with improvements over the Edebohls cushion. The tendency of the latter to slip sidewise is overcome and when not fully inflated the pressure is diffused, instead of being directed to a point; also, the insecure balance of the patient on the old cylindrical cushion requiring readjustment, menacing sterility of the operative field, is obviated.

The new cushion is triangular in shape and is divided into two compartments, the division being on a horizontal line just above the center.

The base of the cushion measures 20 x 8½ inches, and with both compartments inflated is 7½ inches in height. Each compartment is provided with an inflation tube 30 inches long, and is equipped with a

bicycle-type valve, so that whenever desired the degree of inflation may be decreased or increased in either or both compartments by a nurse at a safe distance from the operative field. One or both compartments may be partially or completely inflated, to suit the requirements of the operation. Five years' experience with this cushion has demonstrated its advantages over sand bags, and other types of air-inflated cushions in operations in the upper abdomen, thyroid, tonsil, and cervical adenitis, while in general work, with the patient in dorsal position, the partially inflated bag supports the lumbar curve, preventing post-operative pain due to overstretching on a flat table.

H. G. HAMER.

Caulk, J. R., and Davis, T. M.: The Phthalein Test for Renal Function, with Relation to Operative Procedures. *J. Mo. St. M. Ass.*, 1913, x, 196. By Surg., Gynec. & Obst.

This study gives added proof of the extreme value to the surgeon of the phenolsulphonephthalein test as an aid in diagnosis and particularly as an indication before operation of the functional activity of the kidneys. The authors summarize their findings in 25 cases of obstruction at the vesical neck; 10 cases of renal calculus; 14 cases of renal tuberculosis; 6 cases of pyonephrosis; 11 cases of pyelitis; 3 cases of hypernephroma; and 2 cases of floating kidney; as well as 147 medical cases, in 14 of which there was marked kidney disease.

Two of the cases with urinary obstruction with very low phthaleins died from uræmia before operation. All of the others showed a diminished phthalein output which almost invariably improved on preliminary drainage and in none of these cases was there any suggestion of post-operative uræmia. In the calculus cases there was reduction in the phthalein in only two of the 10 cases, which two cases had an associated pyonephrosis. Of the 14 cases with renal tuberculosis five had bilateral lesions. In the unilateral operated cases the excretion of phthalein ran parallel with the degree of renal destruction. Subsequent phthaleins in these cases showed, immediately after operation, a diminution but later an increase of the output equal to or greater than it was before operation. In six cases of pyonephrosis, the diseased side, in five with unilateral disease, showed marked reduction to total absence of phthalein, the total phthaleins in these cases being about normal, whereas in the bilateral pyonephrosis there was marked total diminution. In 11 cases of pyelitis, three of hypernephroma, and two of floating kidney, there was practically a normal appearance time and total excretion in all. The authors emphasize the importance of comparative tests from time to time on each case, and state no definite percentage figure above which it will be safe to operate, but consider that each case must be judged on its own individual and comparative findings.

FRANK HINMAN.

Scott, S. G.: The Radiographic Technique in Pyeloradiography. *Proc. Roy. Soc. Med.*, 1913, vii, Surg. Sect., 41. By Surg., Gynec. & Obst.

Scott insists that the catheterization and the injection be made by the surgeon, and on the X-ray couch in position for the skiagraphy, so the patient will not be moved, as a slight movement might pull out the catheter. Compression with the X-ray tube does not affect the free entrance of the collargol into the pelvis. The author does not recommend watching the solution fill the pelvis by means of the fluoroscope as it is difficult to see, and takes a longer time. Radiograms are taken at full inspiration and full expiration. The time consumed should not exceed fifteen to twenty seconds.

JOHN G. BURKE.

Kidd, F.: Pyeloradiography: A Clinical Study. *Proc. Roy. Soc. Med.*, 1913, vii, Surg. Sect., 16. By Surg., Gynec. & Obst.

Kidd reviews the progress of urology in the last thirty years, and cites the uses of the cystoscope, the röntgen rays, and the catheterizing cystoscope, which enabled the physiological and pathological value of each kidney to be determined with accuracy. This still left to be solved the anatomical problem, whether two kidneys were present or only one, and what is the shape, size, and arrangement of each kidney and ureter.

This anatomical problem is solved by pyeloradiography, a shadow picture of the kidneys and ureter being taken while the pelvis of the kidney is filled with a solution opaque to the X-rays. The solution used is a five per cent collargol for thin patients and seven per cent for stout subjects. He finds this solution less irritating than colloid silver oxide or "cargentos." He states that the solution of silver iodite has not been used in a sufficient number of cases to establish Kelly's claim that it is non-irritating.

Kidd insists that no anæsthetic be given, as it is important that the patient be able to tell when the pelvis becomes distended, by a feeling of fullness in the loin. If an anæsthetic is given there is no way of telling when the pelvis is full, and too much of the solution may be forced into the kidney. The solution is passed through a ureteric catheter by means of gravity from a burette with a mercury manometer attached, a pressure of not more than 30 mm. of mercury being all that is necessary. A normal pelvis holds from four to ten ccm. of the solution, which falls into the pelvis slowly and steadily, until the pelvis is full, when it ceases to flow. As soon as the fluid ceases to fall in the burette the skiagram is taken, and the catheter is at once removed, so as to allow the solution to flow freely into the bladder, as the longer the solution remains in the pelvis under pressure the more likely it is to penetrate to the cortex. Pyeloradiography is of value in detecting congenital malformations, dilation of the pelvis and ureter, either mechanical or inflammatory.

Kidd had three autopsies where pyeloradiography had been used. Two cases did not show any damage

to the renal substance. In the third case the solution had penetrated to the cortex, and the pathologist was unable to determine whether it had done any damage or not. On experiments made on fresh sheep's kidneys it was determined that infiltration of the cortex depends on the pressure, and also the time the pressure is maintained.

The conclusions are:

1. The gaining of the knowledge of the exact anatomical state of the kidney and ureter before operation is of such vital importance that a method must be found which will give this information.
2. The most feasible method is to fill the renal pelvis with a solution opaque to the X-rays and take a skiagram. This has been done in a large number of cases with excellent results.
3. The solutions so far employed, such as collargol, cargentos, etc., seem to irritate the kidney a little, though the irritation is only a passing one and is recovered from completely.
4. It remains for future research to find a solution that will not irritate the kidney.
5. Meantime collargol can be used in weak solutions of 5 to 7 per cent, under low pressure, 30. mm., and with as short an exposure as possible — less than fifteen seconds.
6. Caution is still necessary in advising pyeloradiography, and it should be employed only by those who are in a position to practice it assiduously in carefully selected cases, that is to say, cases in which otherwise an exploratory operation would seem to be necessary. The risk is far less than that of an exploratory operation.
7. It is probably not wise to inject more than one kidney unless the conditions are very exceptional. It is certainly not advisable to fill the same kidney on three or four different occasions with strong solutions, say 15 to 50 per cent, as has been reported by certain authors.

JOHN G. BURKE.

Walker, J. W. T.: The Early Diagnosis of Hydronephrosis by Pyelography and Other Means. *Ann. Surg.*, Phila., 1913, lviii, 766.

By Surg., Gynec. & Obst.

The author prefaces his consideration of this subject by pointing out the resultant effects of renal dilatation on renal function. In a fully developed hydronephrotic sac there is little secreting tissue, the kidney undergoing changes of interstitial nephritis; removal of obstruction is, therefore, not necessarily followed by recovery of normal function. He cites cases where the impairment was demonstrated by functional tests; also a case of bilateral hydronephrosis in which removal of obstruction failed in that the renal function became progressively worse. The diagnosis of hydronephrosis in this stage is usually an easy matter, and is not further considered in the article.

It is evident that in the presence of beginning hydronephrosis the diagnosis must be made early in order to prevent permanent functional impairment. The cause of the obstruction may or may

not be demonstrable by ordinary clinical means. In the case of obstruction by an impacted stone a gradual diminution in the severity of the attacks of colic is an important sign, pointing to gradual stretching of the pelvis and ureter, and, thereby, of the muscular walls, which atrophy and lose their sensibility. Thus renal dilatation may increase with less and less symptomatic evidence. There may be, however, a constant ache in the kidney region and a persistent polyuria. He cites a case in which marked polyuria and albumin were present, due to a calculus lodged just above the bladder. Removal was followed by disappearance of the polyuria and albumin.

If the obstruction is due to causes such as aberrant vessels, valve formations, or congenital ureteral stenosis, the diagnosis cannot be made by ordinary clinical means, and we must therefore resort to the X-rays and the ureteral catheter. The symptoms are usually intermittent, colicky pain, or constant renal pain, and polyuria, but the picture is rarely clear, and pain from other causes, e. g., osteo-arthritis, must be differentiated.

The author lays stress on the importance of careful and correct interpretation of kidney radiographs and alludes to the lack of normal standards. He has found that there is a constant ratio between the width of the vertebræ and the size of the kidney. He therefore measures the width of the first three lumbar vertebræ in the narrowest part, projects a line outward horizontally from each vertebra equal to twice the above measurements. The three points where these lines terminate will mark the outer limits of a normal kidney. A ureteral catheter with half-inch opaque markings will afford a means of measuring the size of the kidney.

The capacity of the renal pelvis, estimated by Luys at 2 to 3 ccm., by Bazy, 30 ccm., the author has found, by radiography and operation, to be 5 to 7 ccm. as a maximum. He finds an objection to Kelly's method of distention of the pelvis to the point of causing pain in cases of polyuria. Here, the secretion of urine may be so fast that the pelvic distention is not all due to the amount of fluid injected through the catheter. As to the severe colic from pyelography reported in certain cases, the author believes the causes to be too rapid injection, overdistention of the pelvis, or improper temperature of the collargol solution.

A study of X-ray plates leads the author to believe that the renal dilatation may be of two types: (1) A "renal type," in which dilatation begins in the calyces, which become elongated, club-shaped, and considerably enlarged before the pelvis enlarges; (2) a "pelvic type," the pelvis becoming more and more globular and the calyces flattened out. He reports several cases illustrating the different types and degrees of hydronephrosis, and the differential diagnosis from abdominal tumors, such as those of the gall-bladder. Where the diagnosis was made early, his operations for hydronephrosis in its various forms were followed by good results. Sources

of error in radiography are emphasized, the author believing that injury to the kidney by collargol is very exceptional if gravity alone is used, the receptacle never being raised more than 12 inches above the level of the urethra, and the flow stopped at the moment when pelvic pain is produced; the use of an anæsthetic is therefore prohibited.

HORACE BINNEY.

Moore: The Removal of Ureteral Calculi with the Operating Cystoscope; with a Report of Three Successful Cases. *Urol. & Cutan. Rev.*, 1913, xvii, 635.
By Surg., Gynec. & Obst.

The use of the operating cystoscope for the removal of ureteral calculi has received little encouragement from surgical writers, and only a few successful cases have been reported. The mortality of operation by section is high, ranging in the reports of various surgeons from 6 to 17 per cent, and in cases where complications existed the mortality rate ran as high as 52 per cent. The cases from which these figures are drawn are taken from the reports of Leonard, Fowler, Deaver, and others. In view of this high mortality, the assertion that the cystoscope procedure should at least be attempted is certainly not open to question. Successful cases of the removal of ureteral calculi with the operating cystoscope have been reported by Lewis, Schmidt, Kelly, Braasch, Moschowitz, Young, Kreissl, Casper, and Kolischer. With such an array of surgical talent as this in favor of the method the procedure assuredly deserves additional study and development.

The diagnosis is often difficult; the stones may not show at the ureteral meatus upon cystoscopic examination and may not appear in an X-ray negative. In three of the author's cases where ureteral calculi existed, the X-ray negatives were without indications of stone. In the three cases here reported the operating cystoscope has been used successfully. In the first and third case the stone was wedged in the intramural portion of the ureter, protruding into the bladder. In both of these it was possible to grasp the stone with the forceps, which had been introduced through the cystoscope, and to withdraw at one time the whole operating outfit, with the stone. In the second case of the series, however, the stone was not in sight; the calculus was imbedded in the intramural portion of the ureter and the ureteral meatus closed in front of it. In order to obtain the release of this stone a knife was passed through the cystoscope and the ureteral meatus was slit. The stone was then exposed and was grasped with the forceps and withdrawn successfully. In another series of three cases the writer was able to dislodge ureteral calculi by the injection of oil through a ureteral catheter. In each of these cases the stone was in the lower portion of the ureter and passed shortly after the injection of the oil. In all of the cases cited the symptoms entirely disappeared. In view of the results in his cases and those reported by other surgeons the

author concludes that the natural course of treatment following a diagnosis of stone in the ureter should be as follows:

1. An attempt should be made to wash out the stone by the administration of large quantities of distilled water by mouth.
2. The stone should be removed from the ureteral meatus with forceps through an operating cystoscope.
3. An ureter should be injected with oil to cause passage of the stone beyond the grasp of the forceps.
4. The wall should be incised over the intramural stone that cannot be removed by the previous methods.
5. Operation by section should be done as a last resort.

If this plan is followed, the writer believes that the number of cutting operations for ureteral calculi will be materially reduced. Although it may prove to be only the exceptional case that can be relieved before the cutting operation becomes necessary, the procedure will have been worth while in the avoidance, even in a few cases, of the high mortality rate of ureterolithotomy.

Mackenrodt, A.: Treatment of High Injuries of the Ureter; and Treatment of Defects and Injuries of the Neck of the Bladder and the Sphincter of the Urethra (Zur Behandlung hoher Harnleiterverletzungen. Zur Behandlung von Defekten und Verletzungen des Blasenhalses und des Sphincter urethræ). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxiv, 241. By Journal de Chirurgie.

The author gives a critical discussion of the cases of injuries high up in the ureter that he has seen and operated on for several years, and comes to the following conclusions: A closure of the ureter, of ten hours' duration, may under some circumstances completely annihilate the function of a previously healthy kidney, and this acute destruction of function in a healthy kidney may affect the other kidney sympathetically. The microscopical picture of the other kidney in two cases showed that the epithelium of the finer tubules was degenerating and was in all stages of necrosis. No septic process was visible and there was no change in the macroscopical appearance.

In the treatment of high injuries of the ureter there is a choice between the following methods:

1. Ligation of the ureter, which should only be undertaken if a functional test has shown that both kidneys are absolutely normal and if the heart is normal. For these reasons it is not such an insignificant operation as has generally been thought.
2. In cachectic diseases the author recommends an operation tried by him. He carries the stump of the ureter through the quadratus and sutures it to the skin in the lumbar region, and inserts a permanent ureteral catheter. After a time the ureteral fistula closed. This method has the advantage over the first one, in that the affected kidney is gradually excluded.

3. The uniting of the two ends of the ureter over a magnesium tube, which operation he explains.

4. In spite of these methods he thinks, if the other kidney is sound, the best and least dangerous method is extirpation of the kidney.

The author recommends Freund's operation, which, with some modifications, he has used successfully in several cases. The bladder and urethra are formed from the mucous membrane of the vagina or bladder surrounding the fistula. The body of the uterus, drawn forward by anterior colpotomy, is so located that it almost compresses the neck of the bladder by suture of wide lateral flaps from the vagina.

BLEEK.

Rochet: Extravesical Method of Approaching the Bladder End of the Ureter (Voies extra-vésicales d'approche sur la terminaison des uretère de la région correspondante de la vessie). *Cong. de l'ass. franc. d'uro.*, Par., 1913, Oct. By Journal de Chirurgie.

Rochet thinks that to find the termination of the ureters in the bladder and the vessels and nerves that surround them by the abdominal route, sub-peritoneal dissection of the bladder may be utilized as a preliminary step; but it is preferable to go through the peritoneum at once, after placing the patient in the Trendelenburg position, to draw the bladder decidedly upward and forward, and then incise the peritoneum which closes the rectovesical cul-de-sac anteriorly; in this way the ureterovesical region is easily exposed.

J. DUMONT.

BLADDER, URETHRA, AND PENIS

Aversenq: Forms of Pericystitis (Des péricystites). *Cong. de l'ass. franc. d'uro.*, Par., 1913, Oct. By Journal de Chirurgie.

Aversenq shows that the great cellular space described by Retzius around the bladder is in reality divided into two parts by a very well-marked aponeurosis, the prevesico-pelvic fold; the perivesical space is a sort of sheath to the bladder and ascends toward the umbilicus. The rest of the space is called the prevesico-pelvic space. Those inflammations which affect the sheath of the bladder are called pericystitis, those which are localized in front of the organ and separated from it by the prevesico-pelvic fold are called extracystitis.

There are several forms of pericystitis: (1) The serous form, which is an early stage; (2) the sclero-adipose form, which is characterized by the formation of fibrous and adipose tissue around the bladder; (3) the suppurative encysted form, which may be localized around the bladder wall or develop externally toward the peritoneum; (4) the circumscribed phlegmonous form, which is only an extension of the preceding form; (5) the diffuse phlegmonous form, characterized by the extension of the lesions outside the perivesical sheath. It is accompanied by perforation of the bladder and sometimes of the peritoneum and may extend in any direction: (6) The complications of pericystitis may be any

degree of cystitis, even to ulcer and perforation, compression of the ureter, pyelonephritis, pyonephrosis, and perinephritis. There may also be intestinal, genital, or general complications.

There are three chief forms of extracystitis, as follows:

1. The sclerotic, suppurative form, the most typical expression of which is the woody phlegmon.

2. The suppurative form with large abscesses, which is the ordinary prevesical phlegmon, with an abscess in Retzius' space, prolonged toward the pelvis.

3. The phlegmonous form, in which the abscess extends outside the limits of the prevesical space. It may invade the iliac fossa, but has a special tendency to open through the skin in the region of the umbilicus or through some weak spot in the wall, such as the inguinal ring.

The complications are the same as those of pericystitis, with perhaps a more marked preponderance of appendix complications. As to pathology, they are divided into those originating in the bladder and extending outward, and those originating outside the bladder and extending inward. Acute pericystitis originating in the bladder is a complication of cystitis, and may assume a diffuse phlegmonous form. Acute pericystitis originating outside the bladder is often due to an inflammation of the appendix or adnexa. Chronic pericystitis of vesical origin is often a complication of prostatitis, calculus, or stricture. Chronic pericystitis of non-vesical origin may be due to the extension of an infectious or neoplastic inflammation of the uterus, rectum, or some other organ.

All these forms have subjective symptoms which may be confused with those of cystitis or inflammation of the neighboring organs, and objective symptoms which may be determined by vaginal or rectal examination and combined palpation. Acute extracystitis, on the contrary, has very clear-cut symptoms, sharp hypogastric pain and a tumor which extends from the umbilicus to the pubis, the pelvic prolongation of which may be felt through the vagina or rectum. Almost the only symptom of chronic extracystitis is hypogastric swelling.

It is sometimes difficult to diagnose pericystitis, as the symptoms are largely those of cystitis. The date of appearance and the degree of intensity of the urinary symptoms must be considered, as well as the changes in the urine and the character of the abdominal and pelvic swellings. All of these factors, if carefully studied, will lead to correct diagnosis. As extracystitis is more definitely localized it is not so hard to diagnose, yet it must be distinguished from intestinal tumors, cysts of the urachus, etc. Pericystitis is often discovered only on autopsy, and the prognosis is very grave. That of different forms of extracystitis is not so severe, and, as they are more localized, they lend themselves better to treatment as well as diagnosis; but because of their nearness to neighboring organs they may cause serious results if not evacuated promptly. The

treatment of pericystitis is essentially that of the cause. It may be necessary to operate on a hypertrophied prostate, an appendix, or a salpingitis; however, the pericystitis itself sometimes demands special treatment. Extracystitis demands a hypogastric incision and a perineal or vaginal counter-opening.

CATHELIN has studied more particularly the forms of pericystitis which he called gynecological or post-operative, following dissection of the bladder in hysterectomy for fibroids, and suppurative pericystitis, of which he reports a very curious case that had been taken for a very rapidly developing cancer of the intestine and peritoneum. It was incised and followed three months later by a perineal prostatectomy.

VERLIAC, in 52 cases of pericystitis, tried to determine the relative frequency of simple fibro-adipose pericystitis, with or without adhesions to the neighboring organs, suppurative pericystitis, and pericystitis with perforation of the bladder. In prostatic cystitis, fibro-adipose pericystitis is more frequent than suppurative in the proportion of 75 to 25. In gonorrhœal cystitis with stricture, 42 per cent of the cases showed a simple fibro-adipose pericystitis, 35 per cent a suppurative pericystitis, and in 21 per cent there was perforation of the bladder. In cystitis from lithiasis, the proportion was almost the same. In phlegmonous cystitis, fibro-adipose pericystitis is relatively frequent, 40 per cent; the pericystitis is suppurative in 20 per cent of the cases, and there was perforation of the bladder in 40 per cent.

LEGUEU observed a very typical case of diffuse phlegmonous pericystitis, characterized by general symptoms, with almost no local signs. In a pericystitis of this kind opened through the hypogastrium, he had recovery from subcutaneous injection of Vallée's polyvalent serum. Chronic pericystitis, when low down, resembles cancer so much that a wrong diagnosis may be made; exploratory operation may give very good results in these sub-vesical inflammatory tumors.

BAZY divides pericystitis into that of vesical and extravescical origin, and mentions the different locations in which the extravescical forms may originate. Those of vesical origin may be acute or chronic and may lead to the formation of enormous masses of sclero-adipose tissue, simulating infiltrating neoplasms of the bladder. Some cases of partial pericystitis may be accompanied by intense pain, a symptom of phlebitis which gives rise to phleboliths, or false calculi of the bladder. Sometimes interstitial cystitis with pericystitis may lead to stricture of the bladder in women and true incontinence of urine.

POUSSON calls attention to two late results of perivesical inflammation due to suprapubic incision for various operations on the bladder. The first of these is the formation of a fistula in the bladder because of adhesions between it and the posterior abdominal wall. The second is due to an extension

of the pericystitis throughout the whole extent of the organ, so that it becomes embedded in sclerotic tissue and cannot expand or contract, but becomes merely a passive reservoir, from which the urine escapes as fast as it is poured in by the ureters. He cites a case of pericystitis following appendicitis, which was interesting in that there had been no previous symptoms pointing to the appendix.

MARION thinks that one of the most interesting forms of pericystitis is that observed after endovesical operations, and his experience leads him to believe that pericystitis occurring after lithotripsy generally yields if a permanent catheter is inserted, the bladder irrigated, and ice or hot compresses applied. In his opinion, it probably originates in the lymph-vessels and is caused by bruising the mucous membrane during the operation. Occasionally it goes on to suppuration—he has seen two cases that did. He has seen two cases following endovesical operations for tumors, one of which recovered and the other ended in death, with a veritable subperitoneal septic infiltration of the iliac fossa. Cases sometimes follow prostatectomy and in these cases the suppuration is in Retzius' space. They generally end favorably if drainage is established in front of the bladder. In conclusion, a case of tubercular pericystitis is cited, which was exceptional in that it was not an ordinary inflammation in the course of a tubercular cystitis, but a true perivesical cold abscess.

DELBET thinks that pericystitis is frequent but not very interesting to the genito-urinary surgeon, but that paracystitis, on the contrary, is more important; and he thinks, with Guyon and Hallé, that it should be divided into the true and the false. The false paracystitis is due to extra-urinary infections, appendicitis, phlegmon of the broad ligament, puerperal infection, etc. He has seen many cases, but true paracystitis following urinary infection is rarer. Personally, aside from the ordinary cases, Delbet has seen a pericystitis of the anterior surface of the bladder and sclero-adipose pericystitis in a woman. Pericystitis is frequent after section, especially in prostatic cases. To avoid it, he sutures the edges of the vesical wound to the edges of the skin wound; the perivesical space is thus closed to infection.

MARINGER reported a case in which, in the course of a chronic urethritis, infection of the glands of the neck of the bladder caused a localized pericystitis. Recovery followed evacuation of the infected glands by massage.

IMBERT called attention to a form of pericystitis advancing from without inward, characterized by considerable thickening of the bladder wall, with apparently no involvement of the mucous membrane. The bladder symptoms are so slight in this form that often it is recognized only on laparotomy. The abdomen being opened, the uterus is found so buried in adhesions that it is sometimes difficult to reach it. The bladder, which is very much increased in size by the thickening of the wall, caps

the top of this organ, so that it is in great danger of being injured. When the uterus and adnexa are removed the bladder forms a supplementary tumor, which it is preferable to leave alone, for resolution of the fibrous mass takes place spontaneously in the course of a few weeks. The diagnosis is particularly difficult on account of the absence of bladder symptoms. Imbert does not think that the bladder itself requires operation, for he says he has never seen the sclerotic process involve the ureters.

PASTEAU shows that cystoscopy is of value in cases of pericystitis that are not very well defined, both to establish the diagnosis and to determine the stage of progress of the lesions. He has noted, particularly in cases of appendicitis that have a tendency to develop toward the bladder, signs of a diffuse reddening, and œdema, generally localized in the laterosuperior part of the cavity of the bladder.

HOGGE reported a case in which, following epididymectomy, perivesical suppuration developed along the vas deferens as far as the seminal vesicles and the prostate. He states that the diagnosis was very difficult, because there was a suspicion of a right renal tuberculosis in this patient, which had not yet been confirmed, in spite of the fact that all means of diagnosis had been employed, including catheterization of the ureters through the opened bladder.

ABADIE had a case of a young girl, who for a year and a half had had bladder symptoms which rendered a diagnosis of renal tuberculosis probable. Finally adnexal symptoms developed, and after laparotomy with removal of the adnexa the bladder symptoms disappeared. This shows the interest of these cases of false pericystitis, where the lesions, tubercular or other, are located in neighboring organs secondarily, but only the bladder presents symptoms for a long time. This symptomatology may lead to an incorrect diagnosis and to operation directed toward the bladder or the kidney, when it is the uterus or the adnexa that requires attention. These cases of false pericystitis in women should be borne in mind by genito-urinary surgeons as well as gynecologists.

BRIN reported having seen many cases of perivesical abscess following appendicitis, either in the cellular tissue or in the Douglas pouch; three of the latter opened into the bladder and recovered spontaneously; the third disappeared only after opening the rectum. In his opinion lesions of the adnexa also frequently cause pericystitis, and he cites some cases rupturing into the bladder. As to true pericystitis, he cites some cases of infiltration after rupture of the posterior urethra, and shows that the best means of avoiding it is simple cystoscopy. He concludes by citing a case of anterior pericystitis following a puncture of the bladder, a case of acute infection of a diverticulum containing two calculi, and an interesting case of sclerous pericystitis due to puncture of the abdominal wall and the bladder by a thermometer.

LE FUR, besides the case reported in his thesis, reported three other cases of pericystitis. Two were of genital origin in men with very severe gonorrhoea and extensive suppuration, one recovering spontaneously after evacuation of the abscess into the bladder, the other after a perineal incision. The third case was a primary case of pericystitis, very probably of tubercular origin, in a man of 28 who had genital tuberculosis, which ended in death.

PAYAMACHE reported a case of calculous pericystitis ending in death.

DESROS stated that perivesical inflammatory lesions frequently leave behind them functional troubles which are not known, because the patients are dismissed from observation too soon. If they are followed up for a long time two sorts of cases will be found. In one the peripheral infection reaches the bladder cavity and a very stubborn pyuria is set up, which it is very difficult to cure. In the other the urine is clear, but the patients are obliged to urinate with excessive frequency, as in hypertrophy of the prostate, this trouble being worse at night. Ordinarily, there is polyuria also. Later, if the condition persists, there is weakening of the bladder muscle and complete retention develops.

Heath, O.: The Significance of Frequency and Tenesmus in Acute Cystitis. *Brit. M. J.*, 1914, ii, 1430. By Surg., Gynec. & Obst.

Heath presents a case of acute cystitis of one month's duration, treated by an autogenous vaccine in 7 days' time, followed by an absolute and permanent cure, without the use of urinary antiseptics or mechanical washings of the bladder.

The patient, a medical man, had acquired gonorrhoea, the discharge under the microscope showing a mixed infection consisting of gonococcus, staphylococcus albus, and a gram-positive bacillus of the xerosis, or pseudodiphtheria type. There was no treatment other than care as to cleanliness, and the discharge disappeared in about three weeks. During the next two months, there were two or three recurrences of a gleet discharge, which cleared up; at the end of that time, the patient noticed he could not hold his urine for longer than two hours in the day, and had to get up once or twice during the night to micturate. This condition of great discomfort was allowed to continue for a month, when the author was consulted with a view to having a vaccine made.

Examination of the urine showed a moderate amount of pus with numerous vesical cells, and both the stained films and the cultivations made from the centrifugalized pus showed staphylococci and bacilli of the xerosis type, but no gonococci.

In the treatment of acute cystitis following a mixed infection, the author emphasizes three important points: (1) That the gonococci disappear in the majority of cases, and the infection being kept up by the other bacteria which had been present in the original discharge and that marked symptoms of frequent micturition and tenesmus after the act,

are indications of a strong and healthy reaction to the bacteria; (2) that frequency and tenesmus are part and parcel of the process of cure, and should never be treated symptomatically; (3) that tenesmus can be almost entirely, and frequency partly, controlled by the amount of water taken by the patient.

Active treatment was commenced by the subcutaneous inoculation of 50 million staphylococci and 25 million bacilli; and 24 hours later, drink was withheld for five hours to raise the bacteriotropic power of the blood, and with a view to increasing the frequency and producing tenesmus. This procedure was repeated at 48 and at 72 hours after the inoculation, as much water as was required to relieve the symptoms being allowed between times; on the fourth day, a second dose of vaccine of 100 million staphylococci and 50 million bacilli was given, and 48 hours later drink was withheld for four to five hours, for the reasons noted above. The symptoms after the second inoculation gradually improved from day to day, and on the eighth day the symptoms had apparently disappeared altogether.

A third dose, of 150 million staphylococci and 75 million bacilli, was inoculated on the evening of the eighth day in order to make assurance doubly sure. From that day, now over three years ago, there has been no recurrence nor any sign of trouble, and the urine examined on that day was found to be free from pus and bacteria, and has been normal ever since. THEO. DROZDOWITZ.

Stokes, A. C.: Treatment of Tumors of the Bladder. *Urol. & Cutan. Rev.*, 1913, xvii, 644. By Surg., Gynec. & Obst.

The author endeavors to point out the different methods of procedure of operations for tumor of the bladder, depending upon the origin and position of the tumor.

The method of surgical attack preferred is the suprapubic region, and, in a certain number of cases, transverse incision, and in every case a wide incision at least should be made and the bladder well exposed.

The author does not seem to think that the electrical methods offer much hope in cancer, but in cases of disseminated papilloma that have occurred occasionally he believes the DeKeating-Harte current is exceedingly useful. In all doubtful cases, however, and most of them are doubtful, he believes that the removal of the tumor by surgical methods is best wherever possible. Furthermore, he believes that tumors of the bladder should be diagnosed not only as to the fact of their existence but from the point from which they arise in the bladder, and their treatment also should be governed by the point from which they arise.

Partial resection, wherever possible, offers the best results, but dissection of the mucous membrane off of the walls of the bladder is occasionally valuable in sessile tumors when they are dotted over

different portions of the interior surface of the bladder.

When the tumors arise from the prostate, the prostate should be removed. In extensive carcinoma the total removal of the bladder is indicated with the implantation of the ureters into the rectum, which as yet offers the best method of procedure in these cases.

Each tumor of the bladder must be considered separately as having anatomical relations which require special consideration. It is believed that every tumor of the bladder is potentially malignant and should be so considered until proven otherwise if possible.

Bridoux, H.: A Case of Adenoma of the Bladder; with Remarks on the Pathology of the Affection. *Am. J. Urol.*, 1913, ix, 514.

By Surg., Gynec. & Obst.

The patient, a laborer, 48 years of age, entered Rochet's Clinic at Lyons. The family and personal history was negative. He complained of colicky pains for some time but had noticed no calculi. The urine was thick and a hæmorrhage had occurred about three years before; micturition was frequent and abundant; there was no retention and no incontinence.

The physical examination of the kidneys, abdomen, bladder, and rectum was negative; no calculus was found by sound; but hæmaturia was found each time at micturition and the urine contained pus.

The patient was weak, had lost weight and was anæmic. Upon opening the bladder by a transverse incision the surface was found literally riddled with small papillomatous tumors, varying in size from that of a hazel-nut to that of a walnut. All the growths that could be seen or felt were removed by curettage or cautery. The hæmorrhage was so severe that the bladder was packed with iodoform gauze for ten minutes, after which the gauze was removed and a drain inserted. The patient died four days after the operation.

At autopsy the bladder showed signs of the recent operation; the ureters were dilated from about two inches above the bladder to the kidney and the walls were thin; the kidneys were cystic.

Microscopical examination of fragments of the tumor gave evidence of a pure adenoma with glandular tubules and stroma composed of young connective tissue.

The author discusses in detail the old question as to whether the bladder itself contains glands, and concludes that it does, not only in the trigone but also in the fundus, at least rudimentary glands, which are capable of undergoing change and producing adenoma or carcinoma. The epithelium lining these ducts is continuous in adenoma; the cells are columnar and often present karyokinetic figures.

The author submits a new definition of adenomata, as follows:

"These tumors are composed essentially of an agglomeration of elongated, ramified glandular

ducts, lined with a continuous layer of columnar epithelium disposed in a single layer, the ducts opening on the surface of the tumor into the bladder.

"In the depth they become invaginated in the submucosa and even into the muscular structure and are seen either as full ducts ending in a rounded extremity without any acini or in the form of very minute cystic dilatations."

The author believes these tumors to be in many cases the forerunners of carcinoma. He distinguishes two microscopical types. First, we have the circumscribed type, in which the tumor is supported by a pedicle; secondly, the diffuse sessile type.

These tumors may be found in any part of the bladder. In none of the tumors reported, conforming to the above description, were metastases found. Chronic cystitis is a common accompaniment of these tumors.

A. C. STOKES.

Fulton, J. A.: Gonorrhœa Cured Through Use of Heated Bougie. *Northwest Med.*, 1913, v, 349.

By Surg., Gynec. & Obst.

The author recommends, in cases that allow it, the application of heat, which is administered by inserting into the urethra a hollow bougie that is provided with an inlet and outlet tube, both of which are armed with a thermometer in order to control the temperature of the water, which should be 119° to 120° F. The water is forced through these tubes by means of a percolator, each treatment to be of thirty minutes' duration. For each treatment, the urethra is prepared by irrigation with boracic solution, followed by the application of a 4 per cent stovaine or cocaine solution.

The author asserts that in acute cases, after one treatment, the discharge becomes watery and disappears in twelve to fourteen days. Only one acute case lasted twenty-one days. In acute cases the author has never made more than two heat applications, usually one. He has never been able to cultivate the gonococci after one heat application.

HARRY KRAUS.

GENITAL ORGANS

Farr, C. E.: Strangulation of the Undescended Testis. *Ann. Surg.*, Phila., 1913, lviii, 838.

By Surg., Gynec. & Obst.

This condition may be brought about by torsion, kinking, or compression of the cord. It may occur at any age but is most common in the first decade following puberty. Untreated, it leads to aseptic gangrene, abscess, or, more commonly, simple atrophy. In animals the gland is completely lost after 22 hours of strangulation; in men, 75 per cent of the cases treated required castration and in nearly all of the remainder the testis sloughed or atrophied.

The mechanism of torsion of the cord is obscure. It usually follows trauma particularly of the form causing increased intra-abdominal pressure as crying, straining at stool, heavy lifting, and athletic

exercises. Spontaneous untwisting of the cord is rare. The number of twists varies from a half to four or more complete turns, averaging less than two. With the onset of torsion there is usually a serosanguineous transudate into tunica vaginalis.

The symptoms of torsion closely resemble those of strangulated bubonocoele, even, in some cases, to the extent of complete obstipation; but generally the symptoms are less severe, the shock is less and the temperature and pulse are only slightly elevated; the pain, however, is usually much more severe, and vomiting is apt to recur repeatedly. Preceding symptoms in a case in which the testis is absent from the scrotum should cause suspicion of strangulated testis. It cannot, however, certainly be differentiated from Richter's hernia and has been mistaken for orchitis, epididymitis, and even inguinal adenitis. Immediate operation offers the only hope of saving the testis and relieving the patient from intense suffering. The prognosis for the patient is always good; for the testis, nearly always bad, except in very early or very mild cases.

The author reports 3 cases and gives data on 42 others collected from the literature.

J. B. CARNETT.

Shaw, H. B., and Cooper, R. H.: On a Change Occurring in the Pelvis, in a Case of Prepuberal Atrophy of the Testicles. *Lancet*, Lond., 1913, clxxxv, 1606. By Surg., Gynec. & Obst.

The writers report a case of spontaneous eunuchism in a young man of 24. At the age of 7 it was noticed that the testicles were undescended, and manipulations were advised. At 17 they were still undescended, and a truss was advised to force them down. The testicles continued to diminish in size, and at 24 were not to be felt, except that there was a small sensitive nodule in the right side of the scrotum, high up.

The patient had no sexual desire, erections had ceased to occur, and there were no seminal emissions. He was tall and slender; his face was boyish, voice high-pitched, head mesaticephalic. He had no beard, no axillary nor pubic hair; his skin was soft; there was fine hair on his forearms; and his pomum adami was poorly developed.

Measurements of the body showed the lower limbs to be eight and five-eighths inches longer than those of a normal man of the same age.

The external measurements of the pelvis are given, followed by those of a normal subject of about the same age for comparison: Interspinous 9 inches (control 9 inches); intercrystal, 10¾ inches (11½ inches); external conjugate, 7 inches (7½ inches); between posterior superior spines, 4 inches (4 inches); between tuber ischii, 3¼ inches (4 inches).

The brim of the pelvis showed a definite bulging inward in the neighborhood of the acetabula, suggesting an early stage of triradiate pelvis. The contour of the inlet was cordiform and there was wide separation of the pubic bones at the symphysis. The rotation of the transverse to the anteroposterior

diameter of the inlet of the pelvis was as 57 to 67 in the radiogram.

In commenting on the case the authors call attention to two interesting questions which arise: First, is the long-limbedness due directly to disturbance of the internal secretion of the testicle, or is it an indirect result and primarily dependent upon secondary changes produced in the pituitary body by the disturbed function of the testicles? In other words, is gigantism a function of disturbance of the pituitary body only?

The second question is: What is the cause of the unusual shape of the brim of the pelvis?

With regard to the first problem the features connected with castration in men and the production of eunuchism are clearly defined.

Castration of men after puberty causes no morphological change in the individual, because, although internal secretion from the testicle is no longer possible, the influence is carried out by paratesticular or extratesticular tissues which after puberty are endowed with the power of performing the part previously performed by the testicle alone.

If castration is carried out before puberty is established, then removal of the testicles means removal of the tissue which alone is capable of developing and maintaining the secondary sex characters.

Castration before puberty results in the absence of development of sex-characters. The face is beardless, the hair on the body is spare, no hair develops about the anus, and pubic and axillary hair, if present, is scanty. The bones are less dense, the skull becomes dolichocephalic, the limbs long. The thyroid is reduced in size, the thymus enlarges and the pituitary body shows increased activity.

The narrowing of the pelvis may be explained in two ways: it may be due to old rickets or, as suggested by Deery, a reversion to a lower type as met with in apes, and the inward bulging in the neighborhood of the acetabula due to softening of the pelvic bones akin to osteomalacia, which yield to the pressure transmitted to the heads of the femora. The acetabular regions being the meeting point of the three bones, ilium, ischium and os pubis, have shared in the delay in union noticed in the epiphyses elsewhere in the body. This want of solidification has led to the bones in these regions yielding to the increased thrust of the femora.

H. G. HAMER.

Bulkley, K.: Malignant Disease of the Testicle Retained within the Abdominal Cavity. *Surg., Gynec. & Obst.*, 1913, xvii, 703.

By Surg., Gynec. & Obst.

The author reports two original cases of malignant abdominal testes and collects for the first time in the English language the literature of the world on the subject. Fifty-nine cases in all are reported. In the first case, a male 42 years old, there was no congenital deformity except double cryptorchidism; no children; and no traumatic history; but

for one month there had been a tumor in the left lower abdomen. The operation showed a tumor of the left abdominal testis, weighing 210 grams, and adherent to the bladder and small intestine. After excision and 5-inch intestinal resection, the patient recovered and was without sign of recurrence 2 years and 8 months later. Microscopical examination showed a tridermal tumor; i.e., a teratoma. In the second case, a male of 42, the chief complaints were pain on defecation, and constipation. The right testicle was within the abdomen. Laparotomy showed an enormous tumor of the right testis with extensive involvement of the surrounding structures; no sections were taken and the abdomen was closed. The patient recovered from the operation but the end result is unknown. The case was classified as a "cancer."

After a brief historical review, the author discusses the etiology of the condition. Heredity and trauma seem inconsequential; all of the cases occurred during the sexual life of the individual, the average age of 55 cases being 34½ years. Four cases occurred in hermaphrodites, 2 males and 2 females.

The diversity of diagnosis probably represents carelessness in examination. Most of the cases are probably teratomata. The sizes of the tumors vary from an egg to masses filling the entire pelvis. Their position may be at any point between the lower pole of the kidney and the internal inguinal ring. Those of lower position are apt to have a pedicle, while the higher tumors are usually sessile. Most of them originate in the rete testis. Lymphatic involvement occurs early.

Symptoms do not occur until pressure of the tumor or its metastases disturbs function. Abdominal pain and tumor in a cryptorchid should suggest the diagnosis; associated deformity is frequently found.

The prognosis is very poor, largely because of the late occurrence of symptoms. Of 47 cases operated upon, only 3 are known to be alive and well after two years.

The treatment of these cases to be effective must be carried out before the onset of symptoms. The author does not believe in the repair before the age of puberty of inguinal hernia associated with single cryptorchidism, except for strangulation. He urges that the cases be observed until the age of puberty. If at that time the testis has not descended it should be removed. Had this been done, 31 cases of the series which died would have been saved. In double cryptorchids decision must be reserved. After the onset of symptoms, abdominal castration with complete glandular dissection offers the only hope of cure.

The author's conclusions are as follows:

1. Malignant disease of the abdominal testis is relatively rare, but frequently overlooked; in general hospital male admissions it is seen about once in each 60,000 cases. About 1 in every 4 cases of malignant abnormally situated testicles

is found within the abdomen; one malignant abdominal testicle occurs to each 15 malignant scrotal testicles; about 1 in each 75 abdominally retained testes will become malignant.

2. Cases occur mainly during the years of greatest sexual activity, they may occur in apparent females, and are slightly more frequent on the right side.

3. The structure of the tumors differs markedly, but most of them are probably teratomata; other associated congenital malformations are frequently found.

4. Symptoms do not occur until the size of the tumor or its metastases cause pressure.

5. The prognosis is bad. Of 50 cases reported only 3 are known to be alive and well after two years.

6. The treatment should be excision, preferably before the onset of symptoms and after the age of puberty.

Miller, A. G.: Is Enlarged Prostate the Cause of Residual Urine? *Practitioner*, Lond., 1913, xci, 703.
By Surg., Gynec. & Obst.

The author answers the above question in the negative. He has met with cases in which there were enlarged prostates without any residual urine, and others in which there was residual urine without any perceptible enlargement of the prostate. The two conditions usually coexist but they are not necessarily interdependent. Residual urine is the result of an acquired habit of not emptying the bladder thoroughly. An enlarged prostate, by making urination more difficult, increases this habit or may start it. In many cases, if taken early enough, residual urine can be got rid of by training the bladder to empty itself thoroughly, even when enlargement of the prostate is present.

J. B. CARNETT.

Von Engelmann, G.: Operative Treatment of Hypertrophy of the Prostate (Ein Beitrag zur Frage der operativen Behandlung der Prostatahypertrophie). *Deutsche Ztschr. f. Chir.*, 1913, cxxiv, 116. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author reports his results with Bottini's operation and suprapubic transvesical prostatectomy. He prefers the latter to the perineal method because of the greater accessibility of the gland. In 90 of Bottini's operations he had 76.6 per cent recoveries, 11.1 per cent improvements, 3.3 per cent without any result and 8.9 per cent mortality; in 31 prostatectomies he had 80.6 per cent recoveries, 19.4 per cent mortality. The permanent functional results were good in the great majority of cases with both operations, the technique of which he describes minutely.

He recommends operative treatment as soon as there is enough residual urine to demand the permanent use of the catheter. From his experience he concludes that if the prostate is very large the operation of choice is prostatectomy, and also if the middle lobe is pedicled or projects very much into the bladder. In slight hypertrophy, especially where the

hypertrophied middle lobe acts as a hindrance to micturition, he recommends Bottini's operation.

He recommends it in severe hypertrophy, only when the general condition of the patient contraindicates prostatectomy. In severe infection of the urinary passages, especially in pyelonephritis, he prefers prostatectomy on account of the possibility of better drainage that it offers. If there is very marked abnormality of the kidney function only palliative operations such as cystostomy or vasectomy can be considered.

BLEZINGER.

Rush, J. O.: Gumma of Prostate and Bladder; Six Intravenous, and One Intramuscular Injection of Salvarsan and Twenty-Six Intravenous Injections of Neosalvarsan into Patient Sixty-Six Years Old. *Med. Rec.*, 1913, lxxxiv, 1028. By Surg., Gynec. & Obst.

Rush reports a patient with gumma of the prostate and bladder who was treated with intravenous injections of salvarsan and neosalvarsan. The patient, 66 years of age, contracted syphilis in 1869. When he first presented himself to the author, he told of his previous treatment and the administration of one intravenous injection of salvarsan, after which he improved greatly. The author gave the patient six intravenous and one intramuscular injections of salvarsan, followed by 26 intravenous injections of neosalvarsan at short intervals, with the most beneficial results. The conclusions of the author follow:

1. Neosalvarsan should be given in larger doses and at shorter intervals, covering a period of at least one year, in all cases of tertiary syphilis.

2. In cases of gummata, neosalvarsan alternated with mercury should be administered, hypodermically, for a period of not less than one year, and, where possible, the neosalvarsan should be injected not longer than seven days apart.

3. Negative Wassermann reaction should not prevent the continuation of the treatment if benefit is noted by its continuation.

4. In gummata, the Wassermann reaction may be faintly positive or negative, when the lesion is of serious nature and demands prolonged and consistent treatment.

S. WM. SCHAPIRA.

Cumston, C. G.: Some Remarks on Sarcoma of the Prostate. *Am. J. Urol.*, 1913, ix, 509.

By Surg., Gynec. & Obst.

Cumston says sarcoma of the prostate is found most frequently in children under ten years of age, and next in those over 50, a few instances having been reported as occurring between 10 and 30 years, but none between 30 and 50 years.

Sarcoma is far less common than carcinoma. Infrequently it is secondarily involved and the primary focus has been found in the vesicles, right elbow, corpora cavernosa, and in the testicles. Complete retention is often the first symptom to require a physician, being preceded by dysuria or incomplete retention.

There is no pain from the development of the tumor itself until, finally, it causes either urinary or bowel symptoms by obstruction, either of the urethra or rectum.

There is frequently oedema of the scrotum, bulging of the perineum, swelling of the lower abdomen and sometimes of the limbs. By palpation the growth gives a sensation of fluctuation, so much so that it has been mistaken several times for abscess and has been incised. The lymph-nodes in the inguinal region are enlarged and the growth involves the bladder, urethra, and ureters. Death usually occurs within a year from the time of urinary disturbance. These symptoms are far less pronounced in the aged. In a case reported by Marsh, symptoms of intestinal obstruction were present and a colostomy was done.

The sarcoma may arise from any point of the prostate and may involve a part or the entire organ. It is to be differentiated from hydatid cysts of the pelvis by means of the eosinophilia and fixation reaction of Weinbery and Parvu, which is positive in hydatid.

The author does not consider this condition one in which surgery can do more than a palliative operation and he recommends the complete perineal prostatectomy of Young as the operation of choice.

A. C. STOKES.

Cabot, H.: Factors Influencing the Mortality of Suprapubic Prostatectomy. *Surg., Gynec. & Obst.*, 1913, xvi, 689. By Surg., Gynec. & Obst.

In the author's opinion, three factors contribute most importantly to the mortality of prostatectomy: the anæsthetic, the shock aside from bleeding, and the bleeding itself. Cabot believes that of the three anæsthetics—ether, gas and oxygen, and spinal—the last named is the best, considered purely from the anæsthetic standpoint. The best means of avoidance of shock is in this same spinal anæsthesia, in that it blocks the nerve impulses from the site of operation. He considers the proper control of bleeding even more important than is held ordinarily, inasmuch as the ability to withstand operations rests on a delicately balanced mechanism and any undue loss of blood easily disturbs this and lowers the patient's resistance. Various methods of controlling bleeding are constant irrigation, packing, and suturing. The first named method is too inaccurate; the second is a more accurate and certain method, but any packing means tissue necrosis, which, in turn, invites infection, which is so large a factor in mortality.

Cabot believes that some form of suture is the most efficient method, and his technique is as follows: A much freer incision than normal is used to give a good exposure, and the suture is applied to the torn edge of the bladder neck by using a small full curved needle, carrying it into the cavity from which the prostate has been removed and bringing it out close to the pubic bone on either side. This is then carried to the floor of the bladder, stopping

just short of the median line. In the majority of cases this has resulted in an efficient control of hæmorrhage.

Squier, J. B.: Surgery of the Seminal Vesicles.
Cleveland M. J., 1913, xii, 801.

By Surg., Gynec. & Obst.

Based on personal experience with reports of other cases, the author states his belief that from the focal point of infection in the vesicle there may take place a periodical absorption of infective material, either neisserian with streptococcus or staphylococcus, or both, with the subsequent development of single or multiple arthritis, either in the form of chronic osteoarthritis of hypertrophical or atrophical type. He believes that chronicity of vesicular infection is due to the fact that the natural channels for drainage are incompetent. His operation is somewhat different from the Fuller method. He does an inverted Y-incision, and after dissecting down to the prostate he introduces two stout silk-sutures at the junction of the prostate and bladder base, placed as far laterally as possible. Traction on these sutures rotates the prostate and bladder upward and forward, thus allowing incision and drainage with multiple puncture of their numerous diverticula, or excision of the vesicles under control of the eye.

Indications for drainage of the seminal vesicles, according to the author, may be summed up in three words: pus, pain, and rheumatism.

Under the first heading are:

1. Those acute cases developing in the course of a gonorrhœa in which the perivesiculitis present simulates prostatic enlargement.

2. Cases of recurrent epididymitis following acute urethritis and vesiculitis.

3. Certain cases of chronic vesiculitis where there is a defecation spermatorrhœa and which have resisted faithfully carried out non-operative treatment.

Under the heading of pain come those patients complaining of persistent perineal ache, with severe urethritis, presupposing that other possible causes for the condition have been eliminated.

The rheumatic group includes those cases in which a definite relationship may be established between an antecedent gonorrhœa with vesicular infection and the joint lesion.

H. L. SANFORD.

MISCELLANEOUS

Kidd, F.: The Diagnosis and Treatment of Hæmic Infection of the Urinary Tract. *Practitioner*, Lond., 1913, xci, 609. By Surg., Gynec. & Obst.

The author reports 33 cases of pyuria which he has carefully studied during the past three years. His results justify the following statements:

1. Pyuria, if accompanied by fever, means that the pus is coming from the deep urethra or the kidney. The clinical thermometer and the two-glass test will therefore reveal the main facts as to the source of the pus immediately.

2. Spontaneous natural cure is the rule rather than the exception in hæmic infections of the urinary tract. In 9 cases of the 33, cure was obtained in three to four weeks under rest in bed during the febrile stage, copious drinking of water, and urotropine. Five other cases were cured in three to six months while pursuing an inactive regular life and taking urotropine. Ureteral catheterization in the very acute cases should await partial subsidence of fever and vesical irritability.

3. That the kidneys may recover long before the bladder, was proven in six cases in which the urine from the ureters became clear and sterile, while pus and bacteria persisted in the bladder urine. The latter disappeared under vesical lavage and instillations.

4. Lavage of the renal pelvis cures most if not all of the chronic cases. Four cases which had resisted all other forms of treatment were cured by washing out the renal pelvis with 5 per cent collargol, two or three times. Collargol injected into the pelvis is absorbed by the renal lymphatics and can be demonstrated in the lymphatic glands and in the perirenal fat. Collargol of this strength does not injure the kidney as is proved by repeated subsequent examinations of the urine. Skiagrams will reveal stone, and collargol-pyelo-radiograms show obstruction of the ureter. The ureteral catheter may be left *in situ* for drainage purposes.

5. Pyogenic bacteria may enter the urinary tract from the blood stream by way of the prostate and not by the kidney, as evidenced by two cases in this series.

Two of the 33 cases reported were simple cystitis and recovered promptly by bladder lavage. One woman with bilateral granular kidneys and staphylococcal ureus died of uræmia. Only two other cases were not cured and one is still under treatment.

A fact clearly established by this series of cases, as well as by the records of the London Hospital, is that the disease is very seldom fatal. Death may appear imminent in the early acute stages of the attack, but in many cases amelioration of symptoms occurs with astonishing rapidity. One woman with profuse pyuria and hæmaturia and a temperature of 108° seemed quite well after 24 hours.

Hæmatogenous infection of the kidney appears to prove fatal only when the patient is in very poor condition at the onset of the trouble; e. g., children with enteritis and marasmus; when there is gross infarction of practically the whole kidney, caused by a very virulent germ; or when there is some cause of obstruction to the ureter, as by a stone or an abnormal vessel, which remains unrelieved. The author would restrict the indications for nephrectomy to a few hyperacute cases to select which will require great surgical judgment, and to a few unilateral chronic cases which resist all other treatment for 18 months or more.

The author is very dubious as to vaccine treatment having been of value in his own or in other reported cases.

J. B. CARNETT.

Boggs, T. R., and Guthrie, C. G.: Bence-Jones Proteinuria in Leukæmia; a Report of Four Cases; the Effect of Benzol on the Excretion of the Protein. *Bull. Johns Hopkins Hosp.*, 1913, xxiv, 368. By Surg., Gynec. & Obst.

The occurrence of Bence-Jones proteinuria in multiple myeloma is well known. That it may occur in conditions other than myelomatosis has also been pointed out by various observers and the authors have recently reviewed the literature on this particular aspect of the subject. Leukæmia is one of the diseases with which the excretion of this unusual protein may be associated, but the phenomenon has been noted in only four instances, and only in the chronic lymphatic form of the disease, although many cases of all the various types have been repeatedly examined.

In a series of 14 lukæmic patients—i.e., acute lymphatic, 2; chronic lymphatic, 4; acute myeloid, 3; chronic myeloid, 5—which these authors have studied, the Bence-Jones body was found in the urine in four instances: chronic lymphatic, 1; chronic myeloid, 3. Since this is the first observation of Bence-Jones proteinuria in chronic myeloid leukæmia and also as it has been so rarely observed in any form of the disease, it has seemed advisable to Boggs and Guthrie to report the cases in some detail, especially since these cases seem to furnish additional evidence in support of the belief that a causal relationship exists between pathological changes in the bone marrow and the excretion of this protein.

It might be pointed out that, so far as the authors were able to ascertain, three of the cases reported are the first instances of Bence-Jones proteinuria in association with myeloid leukæmia. It has never been observed in the acute forms of the disease, either lymphatic or myeloid, and including the cases presented in this article, only eight times in the chronic varieties. The Bence-Jones protein alone was present in two cases of their series, while Morner's body also was present in the other two cases, as well as serum albumin in one case. The excretion of the Bence-Jones body was small in amount, which seems to be characteristic when it occurs apart from multiple myeloma. The chloride output was normal in one case, in marked contrast to the condition found in two of the cases, and in the authors' cases of myelomatosis and carcinomatosis. Also, in two of the cases, the effect of the benzol treatment is especially noteworthy in that a marked reduction or eventual disappearance of the proteinuria and its associated polyuria occurred, parallel to the diminution in the leucocytosis and apparent approach of the bone marrow to a more nearly normal condition. These cases furnish additional confirmation of the previously expressed view that Bence-Jones proteinuria is not essentially dependent upon one disease, but is a manifestation of disturbances in the bone marrow affecting endogenous metabolism.

GEORGE E. BEILBY.

Rockwood, H. L.: Further Observation on the Complement-Fixation Test in Gonococcus Infection. *Cleveland M. J.*, 1913, xii, 822. By Surg., Gynec. & Obst.

The author presents a second communication upon the complement-fixation test, based on 200 further cases. Among the special conditions in which this test may be of service he mentions the following:

1. In cases of urethral discharge the question frequently arises, "Is this a new infection or an exacerbation of an uncured former attack?" This may be answered by an early fixation test; for a positive result, indicating the presence of gonococcal antibodies, when secured before the third week, may be taken as evidence of an exacerbation of an old infection.

2. In certain cases of acute urethritis, where no gonococci are demonstrable, a negative complement-fixation test, secured at the end of the third week, is presumptive evidence that the urethritis is of a simple and not specific character.

3. Probably the most serviceable application of the test is found in clinically cured patients who wish to be assured of their fitness for matrimony. Among 122 such cases 15 per cent still gave positive blood reactions. Whether this positive reaction is to be interpreted as an incomplete cure in which further treatment is indicated, or as an actual cure in which there are still antibodies persisting, must be decided by keeping the case under observation and subsequent fixation tests.

The author concludes that the complement-fixation test is a means of indicating the presence or absence of an active gonococcal focus, which may be considered accurate, except in the early acute stages, in over 80 per cent of all cases.

Sanford, H. L.: An Efficiency Test of Dispensary Treatment of 100 Cases of Gonorrhœa. *Cleveland M. J.*, 1913, xii, 813. By Surg., Gynec. & Obst.

In 100 cases of gonorrhœa studied in the Lakeside Hospital Dispensary the author found that only 12 per cent were discharged as cured. This was in a large part due to the fact that it was impossible to secure hospital care for the large percentage of cases which were too sick for dispensary treatment. Most private hospitals refuse these cases admission to their open wards and most municipal hospitals are too crowded to accommodate them. The writer believes that it would be an economic saving to any city to provide adequate hospital accommodations for patients with acute disabling complications of gonorrhœa, such as epididymitis and rheumatism. To properly care for these patients and to return them to their work as earning units in society as soon as possible would cost less money than is eventually spent upon them, and those dependent on them, through their prolonged disability. Social service work among this class of patients offers a great opportunity for real constructive charity.

SURGERY OF THE EYE AND EAR

EYE

Darling, C. G.: The Treatment of Trachoma, with Special Reference to Expression and Friction with the Author's Ground-Glass Rod. *Illinois M. J.*, 1913, xxiv, 362.
By Surg., Gynec. & Obst.

Darling has devised a ground-glass rod to be used in the treatment of trachoma, its method of use being as follows:

Before using the rod, the eyes are flushed out with a boric or 1/10,000 bichloride solution to get a good mechanical cleansing of the conjunctival sac. If a vigorous massage is to be given, or the patient is very sensitive, a 2 per cent cocaine solution in adrenalin is instilled, although after a few treatments a rather severe treatment is well borne without anaesthesia.

The upper lid is drawn down and away from the eye and the rod is introduced well up into the retro-tarsal fold, the smooth side next the cornea, and the rod is used without any medicament or is dipped in the solution or ointment to be used.

The lid is pressed against the rod by the thumb of one hand and the rod moved back and forth over the inner surface of the lid and retrotarsal fold with the other; the lid is also stretched a little at the same time by pulling the rod forward.

The lower lids are treated in the same manner, except that the lower lid is drawn up when the rod is introduced. This treatment may be applied every day at first, and later less frequently. If all the follicles are not expressed after a few treatments, they can be opened with a needle or knife-point before the lid is massaged.

Prendergast, D. A.: A Report of a Case of Concussion Cataract. *Cleveland M. J.*, 1913, xii, 835.
By Surg., Gynec. & Obst.

Prendergast reports a case in an adult male, aged 26, in which opacity of the lens developed, beginning one week after a blow over the temple, and becoming complete after the third week. There was no evidence of injury to the eye, the uvea appeared normal, and no rupture in the capsule of the lens could be made out. No absorption took place after a delay of one month, which indicated that the capsule was intact. Needling resulted in complete absorption, leaving a clear posterior capsule. The fundus was normal and the vision 6/9 with the correcting lens. The case was reported because of the rarity of concussion cataract without demonstrable injury to the capsule or other structures of the eye.
EARLE B. FOWLER.

Snell, A. C.: Report of a Case of Dacryocystitis Presenting Several Complications, Including Orbital Abscess and Optic Neuritis. *N. Y. St. J. Med.*, 1913, xiii, 653. By Surg., Gynec. & Obst.

In this case reported, chronic dacryocystitis, with mildly acute exacerbations, had existed for several years in a man 65 years old. At the first examination the sac was found to be large and the nasal duct impermeable, so extirpation was advised. Six weeks later, when seen again, it was found that pressure on the eyeball caused a large quantity of pus to be discharged from a fistula which had formed at the lower end of the sac, and a blunt probe could be passed through the lachrymal septum into the orbit, two and one-half inches from the skin surface. Operation was delayed by the patient for over eight weeks and daily irrigations constituted the treatment; during this period optic neuritis developed. Extirpation and drainage of the orbital infection resulted in cure and vision returned to 20/100. Orbital abscess as a result of direct extension through the lachrymal septum is a very unusual complication of dacryocystitis.

EARLE B. FOWLER.

EAR

Cocks, G. H.: The Indications for Operating in Acute Mastoiditis. *N. Y. M. J.*, 1913, xcvi, 1110.
By Surg., Gynec. & Obst.

The author states that difficulty arises in deciding when to operate in acute mastoiditis because some cases, though presenting the cardinal signs of mastoid suppuration, recover without surgical interference, while others must be operated on early to preserve the hearing and to avoid labyrinthine and intracranial complications.

In differential diagnosis, he considers the aural discharge of considerable diagnostic value, as it is generally conceded that the streptococcus and streptococcus mucosus are more apt to cause acute mastoiditis than the pneumococcus and staphylococcus.

He considers the blood count valuable in determining the presence of intracranial complications, and radiography valuable in furnishing information in regard to the anatomy and pathology of the mastoid bone and in differentiating furuncle of the external auditory canal with oedema from acute mastoiditis.

ELLEN J. PATTERSON.

Tobey, Jr., J. L.: Acute and Chronic Suppuration of the Middle Ear. *Boston M. & S. J.*, 1913, clxix, 871.
By Surg., Gynec. & Obst.

The author discusses the subject under the following heads: (1) Acute otitis in childhood; (2) acute

otitis in adult life; (3) treatment of the acute suppurations; (4) chronic suppurative otitis; and (5) complications and treatment of chronic suppurative otitis.

Infections of the middle ear are more common in childhood because of the relatively shorter and larger eustachian tube, which more easily allows infection to pass from the nasopharynx. The greater prevalence of the exanthemata is also responsible for the more common occurrence of this disease in childhood. The symptoms are variable but fall generally into two types. In the first type the symptoms are very acute: the child, otherwise apparently healthy, screams with pain, has a rapid and high rise of temperature often accompanied by convulsions, and tosses about in bed; occasionally it has retraction of the head, and in fact may present symptoms of acute meningeal irritation. In the second type, the child suffers from a gastro-intestinal disturbance irrespective of diet, is very restless and irritable, has marked variations of temperature, will occasionally cry out as if in pain, loses weight, and yet manifests no acute symptoms as in the first type.

The diagnosis of otitis media in childhood is usually easily made by a careful examination of the eardrum. The treatment consists in careful cleansing of the canal, paracentesis of the drum, and careful aseptic after-treatment. If the discharge is slight the author advocates merely the insertion rather frequently of small strips of sterile gauze. If the discharge is profuse, he uses irrigations of hot sterile water.

The symptoms of otitis in the adult are, first, a sensation of fullness and a diminution of hearing in the affected ear, due to the accumulation of exudate and closing of the eustachian tube, followed in a few hours by sharp, lancinating pains increasing until they are excruciating, and often described as boring in character. Examination of the drum at this stage will show a much reddened drum which may be slightly bulging. Irrigations of the external canal with hot douches, inflation with the Politzer bag, and free catharsis will often effect a cure at this stage. However, if the patient is seen a few hours later, the drum may be distinctly bulging and a paracentesis then be necessary.

The treatment of acute otitis media may be divided into two stages: treatment of the simple middle-ear infection, and, secondly, treatment after involvement of the mastoid. The treatment of the acute simple otitis has already been outlined. Immediate operation is called for (1) in the presence of a postaural abscess or an evident infection of the neck; (2) upon the occurrence of a facial paralysis; (3) upon the advent of symptoms of labyrinthitis, and (4) upon the appearance of symptoms of intracranial involvement. The type of operation depends upon circumstances, but in a large number of cases the best results are obtained from the radical procedure.

In chronic suppurative otitis the conservative treatment consists in the removal of all tissue which might interfere with efficient drainage, such as adenoids, bony obstructions in the nose, and aural polypi. Douching of the ear with warm water is followed by instillation of a few drops of a saturated solution of boric acid in alcohol. The vast majority of cases will respond to this treatment, but in cases where this method is of no avail, the removal of the drum membrane together with the malleus and incus, and the removal of all granulation tissue within the tympanum often results in a cure. But in a certain percentage of cases the radical operation is necessary to effect a cure.

J. H. SKILES.

Pierce, N. H.: Diagnosis and Treatment of Meningeal Complications of Suppurative Diseases of the Temporal Bone. *Illinois M. J.*, 1913, xxiv, 352. By Surg., Gynec. & Obst.

In the diagnosis of otitic meningitis the author emphasizes the various ways by which inflammation spreads to the meninges: First, by way of the labyrinth through necrosis of the external semicircular canal; next, through the promontory of the fenestra rotunda, osteitis of the roof of the antrum and cavum, and sinus phlebitis.

That the infection is by way of the labyrinth is demonstrated by the vertigo, vomiting, and nystagmus, which occur just before, or many months before, the meningeal symptoms. The most frequent symptom is headache, followed by stiff neck, and in 75 per cent of cases the Kerwig sign and in 53 per cent the Babinski sign.

These symptoms may be present in either a serous meningitis or a septic meningitis, and the differentiation of these two conditions has an important bearing on the method of therapeutic surgical attack. In serous meningitis the spinal fluid is alboline and reduces copper. In septic conditions sugar is absent and the fluid acid. Round and polymorphonuclear cells and micro-organisms may be present in both fluids, but in serous meningitis the organisms are dead, and in septic meningitis they are capable of cultivation. The mortality is over 90 per cent and therefore prophylaxis is of great importance.

Early operation on acute mastoid cases will prevent extension of the inflammation, and in chronic cases early signs are warnings that the meninges are becoming irritated. When the symptoms of serous or septic meningitis are in full sway evacuation of the focus within the mastoid and middle ear is essential. If the diagnosis is not clearly septic meningitis, the dura should not be opened. Cerebrospinal pressure may be relieved in the lumbar region. If, however, the meningitis is septic, the subdural space is drained at the point of invasion — through the mastoid wound or outside the mastoid wound: (1) through the squamous portion of the temporal bone, or (2) through the occipital region, namely, via the cisterna magna. W. H. THEOBOLD.

SURGERY OF THE NOSE, THROAT, AND MOUTH

NOSE

Ferreri, G.: Treatment and Prognosis of Malignant Tumors of the Nasal Fossæ and Hypopharynx (Traitement et pronostic des tumeurs malignes des fosses nasales et de l'hypo pharynx). *Arch. internat. de laryngol.*, 1913, xxxvi, 337.
By Journal de Chirurgie.

The author, in view of the difficulty of operation and the numerous failures in the surgical treatment of extensive cancers, thinks that no non-surgical procedure should be neglected which will secure improvement even, if not cure, in such cases, and he devotes the first part of his work to a study of such methods.

There is so little known of the etiology of cancer that it is difficult to establish rules for prophylaxis, but there is no doubt that chronic irritation, such as that caused by the extensive use of tobacco, is partly responsible.

If operation is refused, or the tumor is too far advanced for operation, medical treatment may be given with two objects: (1) To act on the cancer germs, destroying or attenuating the atypical or bacterial cells; and (2) to strengthen the power of resistance of the diseased body.

In all cases where sarcoma of the nose has spared the bones of the face, Price-Brown believes it can be completely destroyed by the galvanocautery.

In inoperable cancers, electrolysis is indicated for it does not do any great harm and destroys the greater part of the tumor.

Fulguration is difficult to apply in the nose and pharynx, and it provokes an excessive and toxic flow of lymph, the drainage of which cannot always be accomplished successfully.

Electrocoagulation by the local application of high-frequency currents causes destruction of distant tissues and profuse secondary hæmorrhage.

Under the influence of X-rays, the cancer-cell undergoes a process of involution, therefore, the X-ray treatment is applicable to malignant tumors of the nose that have attacked the skin.

Radium treatment is at present regarded as one of the best anti-cancer agents. It is applied in radiations of various strengths, either to the surface of the tumor or to its interior. Mesothorium costs only half as much as radium and gives good results; sulphate and bromide of radium and actinium have also been injected into tumors. Arsenic cannot be utilized for the local treatment of cancers of the nose and pharynx. Among the substances that are known to have an effect on cancer-cells are selenium, tellurium, and copper.

G. LAURENS.

Pratt, J. A.: The Etiology of Hypertrophic Rhinitis. *Illinois M. J.*, 1913, xxiv, 345.
By Surg., Gynec. & Obst.

Pratt takes issue with the accepted view that hypertrophy of the inferior turbinate is caused by increased negative pressure, and irritation from direct pressure caused by deviation of the septum. He points out that this cannot be the case, since the hypertrophy is always found on the side of the concavity, and negative pressure is precluded from the fact that the individual so affected becomes a partial mouth-breather. When the septum is normal the author believes localized hypertrophy is caused by the irritation of abnormal secretions, as in sinus diseases.

If no such disease exists, he thinks it due to an irritating condition of the blood, due to auto-intoxication. He calls attention to the fact that if the septum be straightened, the turbinate, whether atrophic or hypertrophic, will return to its normal size without treatment. As the amount of blood to a part determines whether it shows hypertrophy or atrophy, so either will take place, according to the increase or decrease of the amount of air passing through the nasal cavity.

GEORGE M. COATES.

Levy, R.: Diagnosis and Indications for Treatment of Suppurative Diseases of the Nasal Accessory Sinuses. *Denver M. Times*, 1913, xxxiii, 214.
By Surg., Gynec. & Obst.

The author considers it necessary to bear in mind not so much the acute suppurative inflammations of the nasal accessory sinuses, which are comparatively easy to diagnose and usually yield to medical treatment, but the chronic lesions which manifest trivial symptoms, designated as latent, until an acute exacerbation of the chronic lesion threatens the life of the patient unless prompt surgical measures are taken.

He thinks the accessory sinuses should be carefully studied in those patients presenting symptoms of nasal discharge or polypi, periodical localized headache, or eye symptoms unaccounted for by errors of refraction and diagnosed by means of local examination, transillumination, exploratory puncture, or radiography.

He considers the indications for surgical interference to be evacuation of the sinus contents, the establishment of free drainage, and the removal of diseased structures. He deems the choice of operation to be a matter of judgment based upon experience.

ELLEN J. PATTERSON.

Ostrum, L.: Ventilation, Rather than Drainage, Essential for the Cure of Sinus Disease; with Special Notes on the Antrum of Highmore. *Illinois M. J.*, 1913, xxiv, 347.

By Surg., Gynec. & Obst.

Ostrum points out that, as shown by the Cooper and Küster methods of operating on the antrum, drainage alone is not sufficient for a cure, but that, on the contrary, ventilation is sufficient in most cases. Especially is this true in the study of non-suppurative sinusitis in which the question of drainage is not an issue. The author describes in detail the operation on the maxillary antrum through the middle nasal passage, and claims much better results than in those cases where the opening is made below the inferior turbinate. The anterior end of the middle turbinate is removed and the normal ostium sought. Ostrum's reverse antrum forceps are introduced into this and a large opening made forward, backward, and downward, avoiding injury to the lachrymal canal, the entire operation taking but five minutes. A similar procedure may be carried out through the inferior meatus, except that a trocar must be used to procure the primary opening. After-treatment consists simply in cleanliness.

GEORGE M. COATES.

Robertson, A. N.: Chronic Mucocoele. *Practitioner* Lond., 1913, xci, 875.

By Surg., Gynec. & Obst.

The author considers chronic mucocoele as an abscess cavity, a chronic suppuration, subject to acute exacerbations. As such, drainage is the rational treatment, and to obtain this the inferior canaliculus affords, in many cases, the only means. To facilitate drainage by way of the inferior canaliculus, Robertson has devised a small silver tube with one end in the form of a semicircular gutter. When inserted, after slitting the canaliculus, this prevents reunion of the raw cut-surfaces, and the tube affords an easy means of irrigation. After the purulent discharge has cleared, probes and styles are used to open and retain the patency of the nasal duct.

EARLE B. FOWLER.

Gleason, E. B.: Indications for the Correction of Deviations of the Nasal Septum by the Gleason Operation. *Laryngoscope*, 1913, xxiii, 1129.

By Surg., Gynec. & Obst.

The author advances the superiority of his operation for the correction of deviations of the septum, with its adaptability to patients of all ages and the speed with which it can be done, in comparison with the submucous operation which is suitable only in selected cases and frequently results in perforation.

The technique of the Gleason operation is as follows: After thorough cocaineization, a nasal saw is engaged in the obstruction in a horizontal plane, gradually tilted until the direction of the sawing is vertical, thus making a U-shaped incision in the septum extending well anterior and posterior of the deviation. The lower edge of the flap is then pushed into the unobstructed nostril until the neck of the

flap breaks, thus destroying its resiliency, upon which depends the success of the operation.

ELLEN J. PATTERSON.

THROAT

Lillenthal, H.: Retropharyngeal Abscess; the Safest Method of Drainage. *Med. Times*, 1913, xli, 355.

By Surg., Gynec. & Obst.

In dealing with this condition, which may result from vertebral or occipital osteomyelitis, and such bulging phlegmons from pharyngeal or faucial tissues as are frequently seen in children, the author advocates incision and drainage from the outside.

The patient is usually in great distress, with embarrassed respiration and deglutition, and immediate action is necessary to prevent asphyxia or threatened oedema of the glottis. The apparently harmless procedure of opening the abscess from within or allowing it to rupture may cause a fatal spasm, from the pus entering the larynx, or be followed by fatal aspiration pneumonia. As general narcosis is extremely dangerous, the author employs either alypin or novocaine.

The instruments required are a scalpel, at least two artery clamps, a pair of small sharp retractors, a pair of scissors, an aspirating syringe with long needle, a grooved director, and a thin-bladed dressing forceps; a tracheotomy tube should also be at hand. The patient should be upon a hard-padded table with a thin, hard pillow beneath the shoulders. The local anæsthetic is injected along the line of proposed incision, and the incision, about one inch long, is made parallel to the posterior border of the sternocleido mastoid, in its upper part, extending through the superficial and deep fascia and platysma. Deeper dissection is then made, with a blunt instrument, exploring from time to time with a gloved finger, avoiding especially the internal jugular vein. The aspirating needle is then plunged into the tense abscess, when a few drops of pus are aspirated, just enough to make sure that the needle is within the main abscess, remembering that there may be smaller abscesses in that region due to a breaking down of lymphatic glands. Being assured that the needle is properly placed, the grooved director should not be removed until the tube is carried to the bottom of the cavity and secured by suture to the skin or otherwise.

The symptoms will rapidly subside, and, if they recur within a day or two, it indicates that the tube has been displaced, which displacement should at once be corrected. If the symptoms do not abate it is to be suspected that there is an undrained focus or general septic poisoning. The safety of the above operation, even though more troublesome than the evacuation through the mouth, recommends it.

H. A. POTTS.

Leland, G. A.: The Development and Extension of the Limits of Laryngology. *Laryngoscope*, 1913, xxiii, 1121.

By Surg., Gynec. & Obst.

After extending greetings to the members of the society, the author, in his presidential address to the

thirty-fifth annual meeting of the American Laryngological Association, reviewed the enormous widening of the field of laryngology from the mere looking into the larynx with the laryngoscope until with the discovery of cocaine and subsequent addition of the nose and adnexa, and the advent of endoscopy and studies of the pituitary body, the confines of laryngology have been extended to embrace most of the upper half of the body.

He spoke about the rapid strides made recently in preventive medicine and the notable advance in the perfection of endoscopy, and urged the wider dissemination of papers on laryngology, in order that they may come under the notice of the general practitioner and thus lead to early recognition of dangerous conditions which should be referred to the laryngologist.

ELLEN J. PATTERSON.

MOUTH

Gaudier: Lane's Autoplastic Operation on the Palate (Palatoplastie par le procédé autoplastique de Lane). *Cong. de l'ass. franc. de chir.*, Par., 1913, Oct. By *Journal de Chirurgie*.

Gaudier briefly describes Lane's method of closing congenital clefts of the palate. It consists in the dissection of an osseous flap from the bony and membranous palate, which is turned, as on a pivot around the free edge, and sutured to the opposite side, inserting it under the fibromucous covering of the bony palate which has been dissected previously, and to the divided vail of the palate.

Lane's method demands special instruments and great skill, for he operated on very young infants, immediately after birth, if possible. The originality of the procedure lies in this very point, for by using it in infants, there being no teeth, he could utilize a part of the gums for the formation of the flaps.

Gaudier gives the results of his use of the method for three years on 20 cases. This is a very small number compared with Lane's, for it has not yet become customary in France to operate on such young children. Of the 20 operations, only 13

were on children less than two years old. The others were on older children with narrow clefts, and Lane's operation was used in spite of the fact that they had teeth, but without encroaching on the gum. The mortality among the 13 under two years of age was 4. Of the 16 remaining cases there was total failure of union twice, and partial, four times.

J. DUMONT.

Federspiel, M. N.: Some Observations on Oral Abnormalities and Their Relation to Medicine and Surgery. *Wis. M. J.*, 1913, xii, 225.

By Surg., Gynec. & Obst.

Dental disorders are becoming of more interest to medical men and the importance of mouth hygiene is being given due consideration along the lines of prevention. The dentist is usually consulted long after dental caries has begun when the family physician might have detected the trouble in its early stages. Dental caries is largely due to errors of diet during the first twelve years of life. Statistics show that from 90 to 100 per cent of school children are suffering from diseases of the teeth. Many secondary conditions arise from these disorders and probably many diseases of unknown origin may be due to tooth infection, since the major portion of pyogenic micro-organisms affecting the body enter through the mouth. Osler says that septic gastritis and enteritis, as well as appendicular, pleuritic, gall-bladder and pyelitic inflammations, are due largely to infection from the mouth. Wigman and Turner believe suppurative alveolar peridontitis to have been the causative factor in the majority of 42 cases of rheumatism and gout studied. The masticatory function is important in the proper development of the jaws, since chewing only soft substances does not exert enough pressure on the growing parts to ensure their proper formation. Other causes of improper development are the early loss or the prolonged retention of the deciduous teeth. Proper correction aids much in the reduction of mouth-breathing.

GEORGE M. COATES.

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SURGERY OF THE HEAD AND NECK

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SURGERY OF THE EYE AND EAR

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INTERNATIONAL ABSTRACT OF SURGERY

MAY, 1914

MONTHLY COLLECTIVE REVIEW

STASIS AND HUMAN EFFICIENCY

A BIBLIOGRAPHY AND SOME REMARKS

By JOHN BRYANT, M. D., BOSTON

Dr. Bryant's Collective Review, "Stasis and Human Efficiency," is intentionally somewhat abbreviated since the literature upon the subject is so vast and of so varied a character that it is impossible to include it all in one review and at the same time give sufficient emphasis to each opinion to do it justice. Consequently it has been Dr. Bryant's endeavor merely to outline in a most general manner the ground covered by the different theories, and to supply a bibliography of the best articles on the subject so that those sufficiently interested may turn to original sources for more detailed information.—[EDITOR'S NOTE.]

STASIS and efficiency are closely related in inverse ratio, a fact which has been appreciated since very early times.

One of the oldest treatises on medicine in existence, an Egyptian papyrus dating from the fourteenth century B. C., gives directions for the preparation of enemata, and they were in common use among the ancient Egyptians: Herodotus, 443 B. C., wrote, "They clear themselves on three consecutive days in each month, seeking after health by emetics and enemata, for they think that all disease comes to man from his food." The Egyptians ascribed the discovery of enemata to the ibis: "In this same Egypt," says Pliny, A. D., 77, "the bird called the ibis has taught us something similar. He washes the inside of his body by introducing water with his beak into the channel by which our health demands that the residue of our food should leave." Hippocrates, 460 B. C., considered that enemata were preferable to purgatives except in very strong patients, and recommended the use of cylindrical suppositories of honey, smeared with ox-gall, as a still milder form of treatment. In early times enemata were given from a bladder or skin fixed to a metal or bone tube; the enema syringe was invented in the fifteenth century.

(Hertz.) Soranus of Ephesus mentioned the olive oil enema in 100 A. D., and Suetonius recorded the following edict of Claudius, "*flatum crepitumque ventris in convivio emittere.*"

In 1632, Spigelius had obtained a ratio of intestinal length to body length which holds good to-day: "*a corporis proportione, sexies longiora sint eo homine, cujus sunt intestina,*" and since his time the clinicians of the ages have been very busy. Hooke, 1705, experimented with auscultation of the intestines, and Hensing, 1724, remarked upon the duodenal fossæ. Morgagni, 1761, considered the question of ptosis, and the relation of an insufficient supply of food to constipation. In 1765, De Haen considered variation in the position of the internal organs in relation to disease; Haller wrote on the relation of constipation to auto-intoxication, and said that the result might be fever, hæmorrhage, consumption, or insanity; Van Swieten discussed hydrotherapy, and Santorini modestly called one of the peritoneal folds about the appendix "*ligamentum nostrum.*" Cullen, 1789, understood the relation of constipation to piles, and Chalmer, 1792, believed that there was a relation between diarrhœa, constipation, variations in the secretion of bile, and intestinal

atony. Powell, 1800, did not think that constipation depended upon the absence of bile. Monro, 1803, recognized duodenal distention, and wrote on the neighboring fossæ. Hamilton, 1805, noted a relation between constipation and chlorosis. Meckel, 1809, wrote upon the length of the intestine and other related matters. Chevalier, 1819, first recognized dyschezia as a type of constipation, advised the use of enemata, and said of purgatives, "The whole intestinal canal is teased and pained, for the defective action of that very part of it which is most remote from their influence." Powell, 1820, described mucomembranous colitis, and Annesley, 1828, believed that the weight of the fæces in the cæcum produced distention. Between this time and 1850, Duges and Billard, O'Beirne, Beaumont, Blandin, Schultz, Phœbus, Reid, Bell, Rokitansky, Roser, Hassing, and Kesteven continued the work of investigation on these lines.

In 1853, Virchow gave a wonderfully clear account of the whole matter of intestinal adhesions, and shortly afterward appeared in 1857, the article of Treitz, which put the question of peritoneal fossæ on an equally clear footing. From these two papers may be said to date most of the modern work on these subjects, and it may also be said that nothing has since superseded them in point of accuracy. Virchow, after giving due credit to his predecessors in this line of endeavor, several of whom believed adhesions due to developmental influences or to the more mysterious intra-uterine peritonitis, proceeded to systematize things. He divided adhesions into three classes: those of the upper abdomen, the lower abdomen, and of the omentum and noted six localities in which they were frequent. Occasionally he saw a case, as at Würzburg, of a child only a week old in whom the transverse colon was adherent to the gall-bladder, and he could not doubt that it was of congenital origin; but as a rule, he was inclined to think that most of the adhesions he saw in adults were of low-grade infectious origin, due perhaps largely to long continued slight trauma of the intestinal wall from the impaction of fæces. He considered the clinical picture doubtful, and thought it probable that many cases either had no attention paid them, or were mistaken for gall-bladder cases.

The point of view to-day differs from that of Virchow only in that more weight is being given to the developmental errors. Those who have had the largest experience with human embryology and the study of the fœtus, are coming to believe that variations, excessive

or deficient, in peritoneal fusions have a far more important bearing on questions of invalidism in the infant, the child, and the adult than was formerly supposed. Among excessive fusions may be mentioned the kink of the terminal ileum, kinks at the hepatic and splenic flexures, at the sigmoid flexure, the band between the gall-bladder and the transverse colon, and the kink at the duodenojejunal juncture. These are the cases most open to discussion. When the whole small intestine and colon is free on a single mesentery, it is obvious that there has been a failure of normal fusion. Some of the other cases are certainly due to excessive fusion, and others are as obviously inflammatory, perhaps of Virchow's type. In a third group belong those of a mechanical variety for which Lane is sponsor, and a fourth is certainly composed of a mixed type. Probably all types are represented, and surely they are not all of one type; it is, however, the belief of the author, based upon moderate personal investigation,¹ that eventually the majority of the cases will fall into the class of excessive peritoneal fusions, or the mixed type. Rjesanoff, in a recent profusely illustrated and very interesting article, goes so far as to say that all the adhesions found in the region of the cæcum, gall-bladder, and splenic flexure are from the same developmental cause, and he groups them under the name of the *ligamentum varioforme*. He lays special stress upon a small and interesting structure called the *ligamentum felleocysticum-pylorocolicum*, which is present to a varying degree in a large proportion of cases. In lesser forms it may do no harm, but when markedly developed may be the means, for example, of kinking the cystic duct by binding the gall-bladder firmly to the transverse colon. It has been noted by many other observers, among them Huschke, Luschke, Waldeyer, Jonnesco, Ancel and Sencert, Konjetzny, Flint, and Robinson. Robinson used it in measuring the length of the ascending colon and noted that in an extreme case it was possible for a stone to perforate the gall-bladder, work down between the two surfaces of the ligament and perforate into the intestine without ever entering the peritoneal cavity. The ligament itself is of course merely the free edge of the lesser omentum drawn out upon the fundus of the gall-bladder, and as such is subject to the vagaries common to other peritoneal folds.

There are certain points of election for trouble in the abdomen which will be found are almost all in connection with the normal peritoneal

¹Observations on 300 autopsies, to appear later.

folds, the folds themselves being influenced by the disposition of the blood-vessels. Robinson gives a list of 27 peritoneal folds which act as ligaments or supports. They occur particularly at the angulations of the intestine, as for instance about the cæcum and the duodenum and the three flexures, and in these same regions occur the various fossæ of which Treitz is, so to speak, the father. Most of the folds and fossæ bear illustrious names as does almost every inch of the large intestine, but the very recital of these great names distracts attention from the gut itself. When anything happens to the intestine about the terminal ileum, or about the duodenal orifice, or about the sigmoid flexure, it is usually in the nature of a contraction which tends to decrease the caliber of the lumen. At the hepatic and splenic flexures, on the other hand, trouble usually comes in the form of bands which may produce increased angulation without necessary diminution of the lumen. The splenic flexure and the duodenojejunal juncture are of interest from a developmental point of view as being the two earliest points along the intestine to acquire a firm attachment in foetal life, by the left costocolic ligament and the ligament of Treitz respectively; consequently the intestine performs its further developmental gyrations from these two fixed points of departure.

The gut itself is liable to very considerable variations in the length of the small or large intestine and in the thickness of its muscle layers, while the splenic flexure forms a natural division between the thin proximal and the thicker distal portions of the large intestine. Any segment of the gut may be completely lacking. Treves has pointed out that congenital stricture may occur at any natural angulation, especially the sigmoid flexure, and that obstruction from a complete or partial septum is likely to occur in the vicinity of developmental diverticuli, such as that of Meckel or about the ampulla of Vater.

Franke has demonstrated the passage of the colon bacillus from the hepatic flexure through the lymphatics to the kidney and bladder, and Barger and Dale have obtained β -iminazoethy-lamine from the intestinal mucous membrane.

Eppinger and Hess have made good their claim for vagotomy and have shown the possibility of disturbance in any one of the three sets of nerves controlling the intestine, while Paltauf, Stiller, Bartel, and others have shown the seriousness of alterations in the ductless glands.

The extent to which faulty diet can influence the bowels is well enough known, and Hertz has

emphasized the part played by faulty habits. To what extent one can regain control over one's cerebrum is shown by the work of Vittoz.

Dreike and others have shown that the tubercular individual has a distinctly shorter length of intestine than the normal, and from Werner and other comparative anatomists we learn that there are two body types. On one side are the carnivora with a narrow back, a long body form, and a short intestine; on the other side are the herbivora with a wide back, a short body form, and a long intestine. It seems that this holds good in man, but since he is omnivorous one may find both types or mixed types in any clinic. Harris has accurately recorded a constant difference in body form present in what he calls the middle zone of the trunk, between normal individuals and those with visceral prolapse; this zone includes a region between the level of the lower end of the sternum and of the tip of the tenth rib. Dickinson and Truslow, Smith, Pohlman, Goldthwait, Reynolds and Lovett, and many others have drawn attention to the constant errors in posture of the chronic invalids under discussion.

Heredity also plays its part. Albrecht, Fallon, Smith, and others have shown that the congenital defects responsible for certain cases of appendicitis and other troubles have a tendency to occur in families. Consanguinity, alcoholism, and syphilis are understood factors, but the fact which Wood mentions, that in otherwise model parents a single impregnation of the ovum or sperm-cell by alcoholic indulgence at the time of conception may produce its effect upon the future child, has not been so long understood.

It will be seen, from the foregoing cursory glance through the extensive literature on this general subject of stasis and efficiency, that many able workers have been engaged on different phases of the same problem. It is well that it should be so, for it is one of the most serious questions confronting the medical profession to-day. Increasing medical skill has resulted in prolonging the lives of large numbers of persons who would otherwise have yielded to the old law of the survival of the fittest. Consequently, unless something can be done, the race is on the down grade. But fortunately, the outlook is still bright; it lies in the direction of improvement of the children that they may be physically better parents—perhaps in the direction of surgical relief of adhesions before there has been time for the establishment of more serious conditions, such as a dilated duodenum or an incompetent ileocaecal valve which may cause troubles difficult to overcome.

The following excerpts from the literature will supply the conclusions: "The treatment of chronic bowel obstruction associated with auto-intoxication has lately been the subject of much discussion, and it has seemed to me that anything which will help us to elucidate the real facts in these admittedly difficult cases, and to discover the pathological causes which underlie the condition, cannot fail to be of value at the present time. I cannot agree with Lane in considering that all these cases possess a common pathology. It seems to me that there are a great number of causes for this condition." (Mummery). "The problem is comprehensive enough to accept all the assistance it can through gymnastics, bandages, regulation of diet and habits, and still furnish an abundant per cent of human wreckage (Lane) for the surgeon to attempt to reclaim." (Schachner).

The author was led to the study of the literature of stasis by his researches on the occurrence of ptoses, which have led him to results which he hopes will prove of practical surgical value. Others may not have appreciated the great amount of attention given by previous medical writers to the subject. He also acknowledges his indebtedness to Prof. C. S. Minot for his valuable advice in proof revision.

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ABSTRACTS OF CURRENT LITERATURE

GENERAL SURGERY

SURGICAL TECHNIQUE

ANÆSTHETICS

Clark, G. H.: Chloroform Anæsthesia in the Light of Physiological Research. *Glasgow M. J.*, 1914, lxxxi, 33.
By Surg., Gynec. & Obst.

The author refers to his work with Cathcart in which it was found that when animals are really deeply under an anæsthetic the heart is very much less susceptible to the effects of CO₂ than when they are lightly under. He then briefly reviews the danger of acute chloroform poisoning with the liability of sudden death; more extended consideration is then given to delayed chloroform poisoning. He particularly emphasizes the fact that experimental work has shown that chloroform is even more likely to cause delayed poisoning in pregnant dogs and cats than in non-pregnant individuals. He believes the use of chloroform as an anæsthetic should be discouraged. WALTER M. BOOTHBY.

Danis, R.: Sacral Anæsthesia in Operations on the Perineum and True Pelvis (L'anesthésie trans-sacrée dans les opérations sur le périnée et le petit bassin). *Cong. de l'Ass. franc. de chir.*, 1913, Oct. By Journal de Chirurgie.

Danis emphasizes the fact that local anæsthesia is becoming increasingly important in surgery

every day, and describes a new method of producing it which consists in injecting novocaine into the sacral foramina. A large area is thus rendered anæsthetic including the perineum, the external genital organs with the exception of the testicles, and the true pelvis and its contents with the exception of the body of the uterus and the adnexa.

The patient is placed in the abdominal position and a long slender needle is inserted at a point a finger's breadth below the posterior inferior iliac spine and a finger's breadth from the median line. This enters the third sacral foramen and a few cubic centimeters of a one and one-half per cent solution of novocaine-adrenalin are injected. This is repeated a finger's breadth lower in the fourth sacral foramen, and also on the opposite side in the case of bilateral operations.

The author has used this method in operating for hæmorrhoids, in a curettage, and in removing a cancerous rectum. He cites some operations performed by Lippens with it, especially one in which he injected alcohol into the third and fourth sacral foramina in a case of stubborn coccygodynia. The results were good in all these operations.

J. DUMONT.

SURGERY OF THE HEAD AND NECK

HEAD

Depage: Uranoplasty by Transplantation of a Flap from the Upper Lip (Uranoplastie par transplantation d'un lambeau de la lèvre supérieure). *Ann. Soc. belge de chir.*, 1913, xxi, No. 6.
By Journal de Chirurgie.

A young woman of 18 had a classical compound unilateral harelip. She had been operated on in infancy but cicatrization had been defective, the labial notch was very pronounced, and the nostril was thickened and very much enlarged; a keloid had also formed in the scar and she had a pronounced "wolf's jaw."

Depage's operation on the case was as follows: At the first operation the posterior part of the vault of the palate was successfully reconstructed; three

months later the anterior part was constructed with less success. Two months later the patient returned and an operation on the harelip was done, a triangular flap from the lip being used to close the defect in the palate, the flap being left adherent to the mucous membrane at its upper angle. After the edges of the defect were freshened, the flap was drawn through the nasal fossa to the orifice in the palate and sutured to the freshened edges; the wound in the lip was then sutured with endodermal sutures. The reconstruction of the harelip was perfect: there was no notch; the scar, due to the endodermal sutures was barely visible; the nostril regained its normal shape, and on opening the mouth the palate was seen to be complete; at the anterior part, the flap could plainly be seen marked off from the rest of the vault.

Deloré and Santy: Bilateral Ankylosis of the Temporo-Maxillary Articulation, Successfully Treated by Double Resection of the Neck of the Condyle (Un cas d'ankylose bilatérale de l'articulation temporo-maxillaire traité avec succès par la résection double du col du condyle). *Lyon méd.*, 1913, No. 42. By Journal de Chirurgie.

This ankylosis appeared in a woman of 27 following a serious post-abortion infection. Pain and other symptoms of inflammation had been absent for more than six months. The left jaw was ankylosed in a position of slight flexion. Deloré made an L-shaped incision, divided the neck of the condyle with a chisel and mallet, and resected a fragment 2 cm. long, including not only the neck of the condyle but a portion of the lower border of the sigmoid notch, and finished by interposing a flap of masseter. The same operation was performed on the right, where an even firmer ankylosis was discovered. Three or 4 mm. were resected and catgut interposed. The dental arches were forcibly separated with a wooden wedge, which was replaced by two corks placed between the molars, holding them apart 4 cm. On the sixth day the corks were removed for some hours, and some movement allowed; on the fifteenth day the patient could masticate without pain. The perfect result was due in great part no doubt to the integrity of the muscles, which were not yet retracted. R. LERICHE.

Elsberg, C. A.: Some Immediate and Remote Results of Fractures of the Skull and Spine. *Am. J. Surg.*, 1914, xxviii, 38. By Surg., Gynec. & Obst.

In injuries to the skull, Elsberg considers injury to the brain to be of chief importance. He is not inclined to agree with the surgeons who operate in every case, nor with those who claim that epilepsy more often follows in cases not operated upon.

He considers it to be mainly a question of diagnosis. Conservative treatment has been practiced with good results in cases of fracture of the skull without displacement of fragments.

About one-third of Elsberg's cases have developed epilepsy after one or more years. In the majority of such cases very little is found at operation to account for the convulsive seizures, and unfortunately only a few of the patients can be permanently relieved by interference, no matter what the surgeon does.

The indications for operation should be based upon the diagnosis of the condition and whether there is an advancing or stationary lesion. Increasing stupor, increasing changes in the fundi, and progression of the symptoms of weakness to paralysis and twitches to convulsions indicate increasing intracranial pressure. Elsberg divides his cases of fracture of the skull into three classes:

1. In cases which show evidences of fracture of the vertex with few or no brain symptoms it is better to wait. During the course of a few days after accident, symptoms of slow venous bleeding

or oedema may develop; an exploratory puncture of the brain may then be done; with increasing symptoms, subtemporal decompression may be done.

2. In cases where there is partial or complete loss of consciousness, weakness on one side of the face, paralysis of the upper limbs, etc., the operation should be the removal of depressed fragments and extravasated blood.

In cases of fracture of the base of the skull, a subtemporal decompression should be done as soon as signs of increased intracranial pressure appear.

For fractures of the spine where there is evidence of complete transverse lesion of the cord, Elsberg advises a "let alone" policy, but in incomplete transverse lesions where there is evidence of pressure on the cord by dislocated or fractured bones, operation should be performed at once. ISIDORE COHN.

Landon, L. H.: Hæmostasis in Cranial Surgery. *Surg., Gynec. & Obst.*, 1914, xviii, 95. By Surg., Gynec. & Obst.

Due to the free blood-supply of the scalp and the complicated venous return, control of hæmorrhage is very difficult. The author advises, for superficial hæmorrhage, in operations for exposure of the gasserian ganglion: sub-temporal decompression; the MacArthur-Frazier route to the pituitary and others that the semi-sitting posture is a definitely controlling factor and a convenience; in the posterior fossa operations, a specially constructed table which will allow elevation of the head without displacement of the field of operation. In case of rapidly falling blood-pressure, return of the patient to the horizontal position is indicated. The intratracheal and intrapharyngeal insufflation methods of anæsthesia also facilitate the nicety and uniformity with which the patient is kept under ether.

The encircling tourniquet is the best method of controlling scalp hæmorrhage where it is applicable. Landon calls attention particularly to his specially devised metal tourniquet, consisting of a thin flexible spring-steel encircling band, 14 mm. wide, with the thickness of the ordinary steel-tape measure. It is broken fore and aft; posteriorly there is a sliding joint controlled by a spring. The friction between the band and the gauze covering the head prevents slipping of the tourniquet and hence strain on the spring during safe constriction, its action being that of a safety valve. Anteriorly, there is a self-locking lever ratchet by which the band is tightened; laterally, there are two sliding adjustable auxiliary springs for pressure over the temporal fossæ.

In applying the tourniquet, the head is covered with three or four layers of sterile gauze. The instrument, being of metal, may be sterilized, is indestructible, and may be readjusted, tightened, or loosened to any desired pressure or removed at any time during the operation.

In large cortical cerebral tumors with greatly exaggerated communication between the intracranial

veins and those of the scalp, the use of a tourniquet may only serve to increase the hæmorrhage. Here, grasping the edges of the scalp wound with Allis's hæmostats, or other scalp clamps, is preferable. Ligation of one or even both carotid arteries may be considered, using metal clamps which are later removed.

In suboccipital craniectomies, the deep back stitch running suture circumventing the wound is a great advantage. This is carried down to the bone, each stitch overlapping the preceding and runs from one mastoid process to the other. Bleeding from the diploë is largely controlled by using the Cryer spiral osteotome for cutting the flap—control is due to the friction and the bone dust.

To control hæmorrhage from the bone, Horsley's wax is used. Points of bleeding in the dura are frequently stopped by the application of cotton, wrung out of boiling saline solution, or by the application of bits of muscle tissue. Lastly, the pial vessels are ligated by using silk in fine curved needles if, at the close of the operation, hæmorrhage is persistent; drainage is always employed, either rubber tissue or gauze soaked in sterile liquid petrolatum to prevent adhesion. All drains should be taken out in eighteen hours after operation. Patients are placed in the sitting posture as soon as they are out of the anæsthetic.

FRANK RECKORD.

Marie, M. P.: Trephining the Healthy Hemisphere for Decompression, in Some Cases of Cerebral Hæmorrhage (De la trépanation décompressive de l'hémisphère sain dans certains cas d'hémorrhagie cérébrale). *Bull. de l'acad. de méd.*, 1913, lxx, 405. By Journal de Chirurgie.

In cerebral hæmorrhage the sudden irruption of blood produces the apoplectic attack, which is a transitory phenomenon; the compression of the brain produces coma, which is a persistent one. If coma is profound and persistent in ordinary cerebral hæmorrhage, it shows that the normal hemisphere is compressed also. This necessitates trephining for decompression. It would be dangerous, however, to perform this trephining on the side where the hæmorrhage is taking place as there would be danger of increasing the hæmorrhage, and of its tearing the convolutions of the cortex, which would no longer be supported by the bones of the cranium, and blood would escape into the arachnoid and meningeal spaces; therefore, the trephine should be done on the normal side.

Trephining is not indicated in all cases of cerebral hæmorrhage. The patients in whom it is done should not be too old; decided albuminuria is a contra-indication. It is preferable to operate before the temperature rises. If the coma is complete within a few hours it is to be feared that the quantity of blood is so large or that it has extended so far toward the base of the brain that a decompression operation would be inadequate. A decompression trephine not involving the dura mater is neither difficult

nor dangerous. It has been done four times without any accidents, but it should be done in time.

M. CHIFOLIAU.

Thomas, W. S.: Experimental Hydrocephalus. *J. Exp. Med.*, 1914, xix, 106.

By Surg., Gynec. & Obst.

Thomas produced internal hydrocephalus by injecting aleuronat, an insoluble, granular substance, into the ventricles. He found that this produced first an acute, and later a chronic inflammation. With chronic inflammation, obstruction occurs, followed by a slow dilatation, which reaches its maximum in about two months. Obstruction causing internal hydrocephalus may occur at the foramen of Monro, in the aqueduct of Sylvius, or, probably with greater frequency, at the foramen of Magendie. JAMES F. CHURCHILL.

NECK

Ossokin, N. E.: Innervation of the Thyroid (Zur Innervation der Schilddrüse). *Neurol. Westnik.*, 1913, xx, 673.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

This is an experimental investigation of the vasomotor and secretory innervation of the thyroid. In regard to the vasomotor innervation the author comes to the conclusion that the stimulation of the superior laryngeal as well as the inferior laryngeal causes changes in the circulation of the blood in the thyroid. Both nerves have vasodilator and vasoconstrictor fibers, but their distribution is different in different cases; generally they are antagonistic from the fact that fibers of one sort predominate in one and of the other sort in the other.

In the investigation of the secretory fibers of the laryngeal the author agrees with Ascher and Flach that the existence of such fibers is proven from the fact that its stimulation has the same effect as thyroid secretion in increasing the irritability of the depressor nerve and the effect of adrenalin. He accepts the dependence of the secretory activity of the thyroid on the laryngeal nerve and concludes from that that a simultaneous stimulation of the vagus and laryngeal must exercise more of an inhibitory effect on the heart than the stimulation of the vagus alone. This was confirmed by the experiments.

The author concludes that: (1) The vasomotor fibers for the thyroid lie chiefly in the laryngeal, but also to some extent in the superior and inferior pharyngeal; (2) the existence of vasoconstrictors in the thyroid is shown by the effect of adrenalin; (3) on stimulation of the laryngeal nerve there is an increase in the irritability of the vagus and a decrease in that of the accelerator nerves. Since the same thing takes place in the introduction of thyroid extract into the circulation, it shows that the laryngeal has the action of a secretory nerve.

BRESOWSKY.

Wilson, L. B.: Relation of the Pathology and Clinical Symptoms of Simple and Exophthalmic Goiter. *J. Am. M. Ass.*, 1914, lxii, 111.

By Surg., Gynec. & Obst.

Wilson reviews the pathology, both gross and microscopic, in fixed tissues of all the thyroid glands in the laboratories of the Mayo Clinic removed from patients on the "exophthalmic goiter" list to January 1, 1912 — a total of 1,208 exophthalmic thyroids — and of all the thyroids removed from patients on the clinical "simple goiter" list to June 1, 1913 — a total of 2,356 simple goiters — or, in all, specimens from 3,564 patients. The results of his observations are as follows:

1. Practically all cases of clinically true exophthalmic goiter show marked primary hypertrophy and hyperplasia of the parenchyma of the thyroid gland. Furthermore, the clinical stage of development of the disease is paralleled by the stage of development of the pathological condition in sufficiently marked degree that the clinical condition may be estimated from the pathological examination, with about 80 per cent of accuracy. The degree of severity of the clinical condition is similarly paralleled by the pathological condition of the gland. The relationship between hypertrophy and hyperplasia of the thyroid gland and the clinical symptoms of true exophthalmic goiter is remarkably constant.

2. While mild degrees of hypertrophy and hyperplasia, within physiological limits, may be present in the thyroid gland, particularly in the young and during pregnancy, yet the absence of this condition in the thyroids of adults coming to operation for toxic non-exophthalmic and non-toxic goiters is most striking.

3. Eleven per cent of all the thyroids on the "simple goiter" list showed as their principal pathological change a secondary regeneration of atrophic parenchyma.

4. All the thyroids which showed secondary regeneration were from patients whose clinical symptoms were markedly toxic non-exophthalmic.

5. Forty-five per cent of the thyroids from patients on the "simple goiter" list were composed principally of encapsulated adenomas. More than half of these were distinctly of the so-called foetal adenomatous type.

6. Less than 0.5 per cent of the thyroids from patients on the "exophthalmic goiter" list, but more than 44 per cent of the thyroids from patients on the "simple goiter" list, consist principally of groups of dilated acini filled with thick, densely staining colloid material and lined with atrophic parenchyma.

Sanford, A. H., and Blackford, J. M.: A Comparative Study of the Effects on Blood-Pressure of the Extracts and Serums of Exophthalmic Goiter and of Other Substances. *J. Am. M. Ass.*, 1914, lxii, 117.

By Surg., Gynec. & Obst.

The authors used fresh extracts of hyperplastic thyroids, made so that 1 ccm. represented 1 gm. of

fresh gland. These extracts were injected intravenously into dogs and the effect on the blood-pressure noted. Various other substances were used as controls: Witte's peptone — 10 per cent solution — extracts of normal thyroid, sarcoma, hypertrophied prostate, brain, and the serum of goiter patients. A marked fall in blood-pressure is produced by hyperplastic thyroid extract, followed by tolerance to subsequent injections. Similar results are obtained with sera from patients suffering with acute exophthalmic goiters. A crossed tolerance exists between extracts of exophthalmic goiter, and sera; control substances causing drops in blood-pressure do not produce tolerance to goiter substances. The conclusions are that there is a powerful depressor substance in saline extracts of exophthalmic goiters, and apparently the same substance is present in the blood of individuals suffering acutely from the disease.

Marine, D.: Further Observations and Experiments on Goiter, So-Called Thyroid Carcinoma, in Brook Trout; Its Prevention and Cure. *J. Exp. Med.*, 1914, xix, 70.

By Surg., Gynec. & Obst.

After investigating goitrous trout in a private hatchery, Marine finds that feeding the artificial and incomplete diet of liver is the principal etiological factor in bringing about this fault of nutrition, which is at once corrected by feeding whole sea fish. Water plays no essential part in the etiology, transmission, or distribution of the disease, in the hatchery investigated. He concludes that goiter in fish is a non-infectious, non-contagious manifestation of a fault of nutrition, the exact biochemical nature of which has not been determined.

JAMES F. CHURCHILL.

Marine, D.: Observations on Tetany in Dogs. *J. Exp. Med.*, 1914, xix, 89.

By Surg., Gynec. & Obst.

Marine states that accessory parathyroid tissue is present in 5 to 6 per cent of dogs. The easiest method of determining this in a dog is by giving calcium salts daily for two or three weeks after doing an apparently complete parathyroidectomy. In the absence of all parathyroid tissue the animal will die of tetany, while if there remains some active parathyroid tissue the calcium salts will save the animal's life.

Many factors, other than the amount of parathyroid removed, influence the onset of tetany, among which are age, pregnancy, lactation, rachitis, the administration of sulphur, and diet. The removal of the parathyroid lowers sugar tolerance, but rarely to the degree of constant glycosuria. The feeding of fresh or dried parathyroid tissue was found to have no effect on the parathyroid tetanies of dogs. On the other hand, calcium salts were found to have a striking palliative effect, and a preventive action in tiding over otherwise fatal cases. They are not, however, curative in any sense, and the mode of their action is not known.

JAMES F. CHURCHILL.

SURGERY OF THE CHEST

CHEST WALL AND BREAST

Judd, E. S.: Chronic Cystic Mastitis. *J. Mich. St. M. Soc.*, 1914, xiii, 11. By Surg., Gynec. & Obst.

The pathological pictures of chronic cystic mastitis vary so greatly as to lead to the belief that many of these pictures are different stages of one and the same process. Various observers believe that chronic cystic mastitis is a precancerous stage and that the type undergoes malignant degeneration.

Chronic cystic mastitis is, in itself, a benign condition and, except for its evident relationship to cancer and to relieve pain, would not require treatment. The unsatisfactory results obtained in operating for well defined cancer would indicate that progress in the surgical treatment of this disease will be made by operating in the precancerous stage.

In a series of 218 cases of chronic cystic mastitis operated on in the Mayo Clinic up to January 1, 1913, there were 207 females and 11 males. In all of the males, the condition occurred between the ages of 20 and 30. In the females, 19 occurred between 20 and 30 years, 63 between 30 and 40 years, 96 between 40 and 50 years, 27 between 50 and 60 years, and one between 60 and 70 years; the age of one was not mentioned. It will be seen that a large percentage of these cases occurred in patients between the ages of 40 and 50, i. e., the period spoken of as the "cancer age."

In conclusion, the author states: "(1) I believe chronic cystic mastitis has a definite relationship to cancer of the breast and in many instances may be considered a precancerous condition. (2) In cases suspicious as to malignancy, a radical operation for cancer should be performed. (3) In cases of chronic cystic mastitis that can neither clinically nor pathologically be diagnosed as to malignancy, the conservative amputation with removal of the gland-bearing fascia is the operation of choice."

Von Haberer: Removal of the Thymus, and Its Results (Thymusreduktion und ihre Resultate). *Wien. med. Wchnschr.*, 1913, lxiii, 2833. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

In 295 cases of operation for goiter the thymus was removed nine times; in five cases all women, because the goiter alone did not explain the great difficulty in breathing and therefore a status thymicus was suspected. There was dullness over the manubrium of the sternum; in 2 cases a shadow on the röntgen picture, in 2 cases dilatation of the heart and very rapid, small pulse, and in 3 cases considerable delay in the coagulation time of the blood. The post-operative course was uneventful and the results thus far satisfactory, as the symptoms have disappeared, and also the changes in the heart.

Four other cases of thymectomy were performed

for very pronounced cases of Basedow's disease, and in 3 of the cases a part of the goiter was removed at the same time. The post-operative course in these cases was as simple as after ordinary strumectomy, without even any temporary signs of heart delirium. The frequency of the pulse decreased almost immediately and all the rest of the symptoms as well. The most noteworthy case, however, is that of a man reported at the surgical congress this year. He had had two unsuccessful operations on the thyroid and was in an almost dying condition from insufficiency of the heart. A very small thymus was removed, with almost immediate results; now after ten months he can climb mountains 2,500 meters high. Microscopical examination in all 9 cases showed a persistent hyperplastic thymus.

TOLKEN.

M'Neil, C.: The Association of Acutely Fatal Illness in Infants and Children, with Abnormal Constitution: Status Lymphaticus. *Edinb. M. J.*, 1914, xii, 25. By Surg., Gynec. & Obst.

This author discusses from several points of view those mysterious cases of sudden death termed usually *status lymphaticus*. The clinical features are instantaneous or almost instantaneous death of an individual in robust health in whom after death careful search fails to reveal evidences of disease. These cases fall into several groups: (1) Infants found dead in bed overnight; (2) older children succumbing during or shortly after anesthesia; (3) young adults dying suddenly during bathing. This paper concerns itself with the first group and with a series of cases allied to them.

The explanations of these deaths are made essentially under two headings: (1) The mechanical theory of pressure by an enlarged thymus on adjacent vital structures; (2) the non-mechanical theory of an altered constitution of the body. The first is the older theory and, though relegated to the background by Friedleben, has had more recent advocates. The second theory is due to Paltauf, who believed that the enlargement of the thymus and lymphatic tissue throughout the body, changes in the heart, and narrowing of the aorta to be the predisposing factors, actual death being due to sudden heart-failure.

Of the clinical characteristics, the age incidence is of importance. In 101 cases collected by Ssokolow 70 per cent were below one year. Sex makes no difference except in older children and young adults where males predominate. The general appearance of the patients is often of excellent development. Sometimes a pasty skin, thick panniculus, enlargement of superficial lymph-nodes, and rickety changes are seen.

Among the pathological features an enlarged thymus is important, although the actual size in any particular case has ceased to be of importance

with the decline of the pressure theory. Microscopically, hyperplasia is present in both cortex or medulla, or in one alone. Hassal's corpuscles are usually enlarged and show some kind of degeneration. The weight of the thymus in health is of prime importance. According to Dudgeon it weighs 7 to 10 gms. up to 2 years, then stationary, and diminishing after puberty. Hammar gives figures as high as 37.5 gms. The lymphoid tissue shows overgrowth in areas where it is usually invisible to the eye, as in œsophagus, stomach, duodenum, jejunum, the greater part of the colon, and especially at the base of the tongue. Prominence of Peyer's patches, solitary follicles in the ileum and follicles of the spleen are notable marks of the condition. Microscopically the lymphoid tissue shows simple hyperplasia. In older children the fibrous stroma is thickened. The medulla of the adrenals, according to Wiesel, shows almost complete absence of chromaffin staining with bichromate salts. This suprarenal hypoplasia is now a part of the pathology of *status lymphaticus* and Wiesel believes the sudden death to be an adrenal death. In the thyroid a chronic hyperplasia seems to be established. In the genital organs various degeneration changes have been noted. Other changes found are narrowing of the aorta or its branches, hypoplasia of the heart, horseshoe kidney, double ureters, over average length of skeleton, free mesocolon, etc. Bartel, who insists upon the significance of these widespread changes, has taught the doctrine that *status lymphaticus* is only a part of a pathological condition which he calls *status hypoplasticus*.

The new cases portrayed in this paper deal with two groups: (1) 13 infants found dead in bed; (2) a group of older boys aged 10 to 16 years dying after very short illness, whose pathology resembled that of the first group.

Those of the first group were from 25 days to 4 months old and all were well nourished. Eleven were found dead in bed, one died suddenly after a fit of coughing, and the other died two hours after cyanosis appeared and dyspnoea began.

At post-mortem examination 4 thymuses were weighed: 3 weighed 20 gms. and one 51 gms.; others were noted as enlarged. In only a minority was enlargement of the lymph-tissues noted. These cases are not strictly cases of *status lymphaticus*, but "*status thymicus*" could be applied to them. The lungs nearly always showed congestion, often subpleural hæmorrhages. In 8 cases, examined microscopically, all showed intense congestion of the capillaries, catarrh of the epithelium, exudation of fluid and cells into the alveoli, etc., in fact signs of bronchopneumonia. In 127 cases of sudden death in children, Paltauf found capillary bronchitis, but ruled out all these from the category of lymphatic constitution. It is reasonable to assume in these cases called fulminant bronchopneumonia that an abnormal constitution of which *status lymphaticus* is a part is a contributory factor in the sudden death.

In certain industrial schools in Great Britain cases

of illness occurred divisible in 3 groups of pneumonias: (1) rapidly fatal cases; (2) irregular, non-fatal, lobular in type; (3) latent or abortive pneumonias. In the fatal cases it was established that pneumonia was present, that it was pneumococcal, and that the classical marks of *status lymphaticus* were present. This led to the conclusion that these fulminant pneumonias owed their fatal character to this morbid constitution and that the irregular features of the non-fatal cases were due to the same diathesis.

The clinical features of the two groups are similar. In the infants found dead in bed the illness began during sleep. Among the older children out of 22 fatal cases 2 deaths occurred in sleep; of the other 20, 11 died in 24 hours, and 9 within 48 hours. Moreover, the early character of the illness was often trivial and assumed grave features only an hour or two before death. Also the majority of the boys dying with fulminant pneumonias became ill during the night or early morning. In both groups the pathological features of congestion of the lungs and bronchopneumonia and presence of *status lymphaticus* parallel each other.

Examination of the thyroid in the cases of fulminant bronchopneumonia showed a marked hyperplasia in all specimens examined. In 12 of the 13 cases of infants the thyroid showed evidences of unquestioned marked hyperplasia. The thickening of the fibrous stroma is very considerable, and this point seems to establish the fact that the abnormal condition of the gland had existed for some time before death, and this lends support to the theory of some morbid constitution.

Other infections, as scarlet fever and diphtheria, have been described as fulminant, patients dying within a short time. Dant examined 11 such cases of diphtheria, all showing pronounced *status lymphaticus*. In one case of scarlet fever the thymus was found enlarged and the thyroid, examined by McNeil, showed marked hyperplasia, and especially the thickening of the fibrous stroma. These facts seem to harmonize with the evidence found in the cases of fulminant pneumonias in institutions.

W. H. BUHLIG.

TRACHEA AND LUNGS

Crane, A. W.: X-Ray Examination of the Lungs.

J. Mich. St. M. Soc., 1914, xiii, 20.

By Surg., Gynec. & Obst.

According to the author's conclusion, the fluoroscope is superior to a single plate, but a stereoscopic pair give diagnostic vision superior to any other method. Familiarity with the fluoroscopic appearance of the lungs in health is necessary. The room must be absolutely dark and, if it is daytime, the physician should first rest his eyes in darkness; even fifteen minutes may be insufficient for the best results.

The ultimate factors of a fluoroscopic examination are increased or decreased transparency and

motion. The end result of röntgenography agrees with the end-result of the physical examination if the phenomena are correctly interpreted. The same factors which determine X-ray shadows determine the character of the percussion note. The field of auscultation is larger in some directions than that of the X-ray. Affections of the bronchial tubes, denoted by râles and inflammations of the pleura denoted by friction sounds, are beyond the province of X-rays, but the margin of possible error is wider for the stethoscope and when the signs are correctly elicited and interpreted the results of auscultation must agree with those of röntgenography. Röntgenography is in itself inspection; therefore it is a part of the physical examination and not a method to supplant it.

The author's methods of interpretation are summarized in the following tables:

LUNG AND PLEURAL SAC

Increased transparency.

1. General: (1) Pneumothorax; (2) Emphysema; (3) Compensatory emphysema.
2. Local: (1) Empty cavity; (2) Pneumothorax; (3) Bronchiectasis.

Decreased Transparency.

1. General: (a) Light shadow: (1) Generalized pleurisy; (2) Congestion of lung. (b) Dark shadow: (1) Edema; (2) Cirrhosis. (c) Black shadow: (1) Effusion to apex; (2) Total consolidation.
2. Local: (a) Light shadow: (1) Infiltration; (2) Thickened pleura; (3) Atelectasis. (b) Dark shadow: (1) Partial consolidation; (2) Small filled cavities; (3) Pleuritic exudates; (4) Small tumors; (5) Infarcts. (c) Black shadow: (1) Consolidation; (2) Pleuritic effusion; (3) Gangrene; (4) Large filled abscesses; (5) Large tumors; (6) Large hydatid cysts.

Motion.

1. General: Changes in density during respiration.
2. Local: Changes in form: (1) Of half-filled cavities; (2) Line of thickened pleura; (3) Effusions.

Diaphragm.

- Visibility: 1. Increased. (a) Inspiration, (b) Emphysema, (c) Pneumothorax.
2. Decreased. (a) Expiration; (b) Edema; (c) Congestion of lower lobe; (d) Consolidation of lower lobe; (e) Thickened pleura at base; (f) Pleuritic effusion or exudate; (g) Empyema.

Position.

1. Low. (a) Emphysema; (b) Asthma.
2. High. (a) Cirrhosis; (b) Tuberculosis; (c) Abscess of liver.
3. Difference of the two sides.

Form.

1. Arched. (a) When high (see above); (b) Abscess of liver.
2. Flat. (a) When low (see above).

3. Irregular. (a) Diaphragmatic hernia; (b) Hepatic abscess beneath diaphragm.
4. Difference between the two sides.

Motion.

1. Ordinary respiration. General range. 1. Restricted. (a) Tuberculosis; (b) Pleurisy. 2. Exaggerated. (a) Compensatory emphysema.
2. Forced Respiration. (a) General range same as ordinary respiration. (b) Upper half. 1. Restricted: (a) Emphysema; (b) Asthma; (c) Pleurisy. 2. Exaggerated: (a) Compensatory emphysema. (c) Lower half. 1. Restricted: (a) Tuberculosis; (b) Pleurisy. 2. Exaggerated: (a) Compensatory emphysema.

DAVID R. BOWEN.

HEART AND VASCULAR SYSTEM

Leporski, M. J.: *Influence on the Heart's Action, of Mechanical Injury of the Surface of the Heart* (Über die Beeinflussung der Herzstätigkeit durch mechanische Verletzung der Oberfläche des Herzens). *Russk. Vrach*, St. Petersburg, 1913, xii, 1428. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author had a case in which the patient had fallen and stuck a needle in the breast, at the edge of the sternum between the third and fourth ribs. The needle showed pendulum movements synchronous with the pulse. While the needle remained there was no heart disturbance, but as soon as it was removed the patient lost consciousness, the pulse disappeared, the respirations stopped, there was marked cyanosis and convulsive attacks which continued twenty minutes and then the heart resumed its normal action. These attacks were repeated several times but the patient finally recovered.

The author instituted a series of experiments to determine the influence of superficial injuries of the heart on its action. He found in the literature many cases reported of severe injury to the heart without any disturbance in its action, and other cases in which the heart stopped on only slight injury. His experiments were performed on four dogs and one cat, which were anesthetized with morphine and ether, cannulas inserted into the jugular and carotid and connected with a Ludwig kymograph. Artificial respiration was performed and the heart laid bare. In two cases the pericardium was not opened, in the other cases it was, and the heart's surface was lightly scratched with a needle. In three cases there was immediately a marked fall in blood-pressure and cessation of the heart's action, in two cases the injury had to be repeated several times before the heart's action stopped. The injury was in all cases as superficial as possible; and in only one case was it unsuccessful, there being a slight defect of the heart muscle.

There was no bleeding of sufficient extent to demand consideration in the results, so the author does not think the effect can be regarded as the result

of shock. There was fluttering in the ventricle immediately after the injury, followed by cessation of heart action, while the auricles continued to act normally for some time. Since it seems impossible from the nature of the irritation that the effect could be due to injury of the heart muscle, the author's conclusion that it must have been due to damage of the nervous elements is in agreement with the conclusions of other authors. Also in agreement with others he concludes that certain areas of the heart's surface are especially sensitive to injury; e. g., (1) the anterior surface of the left ventricle in the region of the longitudinal sulcus, and (2) the region below the auriculoventricular sulcus on the posterior surface of the left ventricle.

VON HOLST.

Potherat: Treatment of Wounds of the Heart
(Sur le traitement des plaies du cœur). *Bull. et mém. Soc. de chir. de Par.*, 1913, xxxix, 1366.

By Journal de Chirurgie.

Potherat described a case of penetration of the anterior surface of the left ventricle by a revolver bullet. There was no orifice of exit and the bullet could not be found. The wound was sutured with catgut and the pericardium drained. The patient died the thirteenth day of purulent pericarditis. The author raised the question whether the pericarditis was to be attributed to the drainage or to infection produced by the projectile itself or by bits of clothing carried in with it.

LENORMANT believes that wounds of the heart are more serious than statistics would lead us to believe, because there are no physical or functional signs that enable them to be diagnosed at once. The subjective signs have no value for they may be slight in very serious wounds and *vice versa*. The objective signs have more value; that of hæmopericardium, for instance, which shows that the heart is being compressed by blood; but this may not be present if there is a sufficient opening into the pleura to allow the blood to flow there. The best guide is the progressive increase in the general symptoms, especially circulatory disturbances. In doubtful cases exploratory operation is necessary; this consists in simply following the course of the projectile, enlarging it so that a sufficient opening is obtained to treat the lesions. In thoracotomy Lenormant recommends that the operation be limited to resecting the fifth cartilage and rib to a length of 6 or 8 cm., sectioning the fourth cartilage at its sternal end, and breaking the rib by bending it backward. This gives an opening sufficiently large for suturing the heart wound and makes it easier to spare the pleura, the opening of which is useless, to say the least.

In cases where there is no orifice of exit the bullet may be in the heart cavity or imbedded in the posterior wall. But there is another possibility: it may strike the heart at a tangent and, especially in the region of the apex, open up a path through the wall that closes again, leaving no opening.

SOULIGOUX confirmed this last statement by the description of a case of his own.

ROBINEAU described a case of stab wound of the left ventricle which was sutured without drainage of the pericardium or pleura. The patient recovered with no complications except an aseptic pleural effusion which was relieved by two punctures. The diagnosis was made from the signs of extreme anæmia without external hæmorrhage or signs of serious internal hæmorrhage, and from the great increase in the extent of the cardiac dullness.

SAVARIAUD believes, from a case of his, that deathly paleness with the absence of any considerable internal or external hæmorrhage is a good sign of compression of the heart.

J. DUMONT.

PHARYNX AND ÆSOPHAGUS

Lambert, A. V. S.: Treatment of Diffuse Dilatation of the Æsophagus by Operation; Description of a Hitherto Unpublished Method; Report of a Case. *Surg., Gynec. & Obst.*, 1914, xviii, 1.

By Surg., Gynec. & Obst.

Lambert divides diffuse dilatation of the æsophagus into three groups, depending on the shape of the ectasia: (1) fusiform, (2) pear-shaped, (3) "∞"-shape.

In the first two varieties Lambert states that the opening into the stomach is the most dependent portion and that these cases may be cured by simple dilatation of the cardia, while in the third variety there is a reservoir or dead space lying to the right of the cardiac opening and on a lower level. It is in this last variety that some operative procedure is necessary for a cure.

The author reports a case of the "∞"-shaped dilatation and describes an operation for its relief. This consists in drawing the dilated lower portion of the æsophagus down into the peritoneal cavity through the widened œsophageal opening. The stomach is then opened and a long clamp is so placed that one blade passes into the lumen of the æsophagus through the cardiac opening, while the other blade remains in the stomach. When this clamp is closed it acts as an æsophago-gastrotribe and includes between its jaws the cardiac opening of the æsophagus, the dilated lower end of the æsophagus and a portion of the lesser curvature of the stomach. The clamp lies *in situ* until adhesions have formed, when it is tightly clamped, crushing the tissues between the blades. The author concludes:

1. There are a small number of cases of dilatation of the æsophagus as a result of cardiospasm, which require operative interference in order to remain permanently cured.

2. This group comprises those cases in which the æsophagus has lengthened in addition to having become dilated, and in consequence has the form of an "∞"-shaped curve.

3. These cases may be successfully treated from within the abdomen without fear of infection to the pleuræ or mediastinum.

4. A preliminary gastrostomy, through which the patient may gain nourishment, and so improve the nutrition and power of resistance, is an advantage.

Meyer, W.: Extrathoracic and Intrathoracic Oesophagoplasty, in Connection with Resection of the Thoracic Portion of the Oesophagus for Carcinoma. *J. Am. M. Ass.*, 1914, lxii, 100.

By Surg., Gynec. & Obst.

Meyer reviews briefly the plastic measures designed to replace a resected section of the lower oesophagus. He regards the gastroplastic method of Jianu as the most promising method and prefers the extrathoracic, subcutaneous transplantation of both the new formed tube and the oral end of the resected oesophagus.

Bircher was a pioneer in the construction of a new oesophageal tube extending from the neck to the stomach, infolding for this purpose the skin over the anterior aspect of the thorax. Roux and Wullstein followed, forming an intrathoracic tube from a coil of upper jejunum, detached from all normal connection save the mesenteric blood supply. Vulliet and Kelling similarly adapted for a new oesophagus an excluded segment of transverse colon.

To obviate the multiple operations and dangers of strangulation to the transposed intestinal coil, a number of operations have been recently devised utilizing the stomach for plastic material. Von Fink turns upward the first portion of the duodenum and mobilized pylorus, an operation particularly indicated where the cardiac end of the stomach be involved by neoplasm. Ach and others have proposed to mobilize the stomach and distal end of the oesophagus particularly indicated when resection has been necessitated near the middle of the oesophagus, and to either transpose extra-thoracically, or to make an internal anastomosis with the free end of the upper oesophagus.

Prior to Jianu, Depage and Hirsch had molded into oesophagus, stomach wall from the lesser curvature and anterior aspect, respectively. Meyer regards the procedure of Jianu as offering a longer, more surely viable tube with minimal operative trauma.

Jianu divides the gastrocolonic portion of the great omentum at a distance two inches from and parallel to the major curvature of the stomach. The right inferior gastro-epiploic artery is divided, but the left is carefully preserved. Next a tube is formed of the lower portion of the stomach by quilting the anterior to the posterior wall by a double row of mattress sutures, beginning at the lower border two inches from the pylorus and following a line of plotted incision one and one-half inches distant from and parallel to the greater curvature. The mattress sutures continue well into the fundus of the stomach, one to two inches past the reflection of the left inferior epiploic artery. Incision is made between the row of sutures freeing a tube 18 to 25 cm. long, attached by its

base to the fundus of the stomach, and efficiently nourished by the left inferior epiploic artery. The raw edges of the stomach and the tube are turned in by suture, and the apex of the tube is drawn through a subcutaneous tunnel as high onto the anterior thoracic wall as it will reach, here to be ultimately anastomosed with the mobilized end of the oesophagus. Narrowing the stomach by a third does not interfere materially with function.

Meyer regards the Jianu procedure less effective as a pure gastrostomy than the present standard methods, since regurgitation occurs along the widely patent tube, probably from a continuance of normal peristalsis now occurring in an undesirable direction.

Those patients presenting infiltrating carcinoma behind the aortic arch with history of complete obstruction, Meyer regards as not susceptible of any, save palliative surgery.

While intrathoracic oesophagoplasty when further developed experimentally would seem the ideal operation, yet if it is found that a transposed oral stump of the oesophagus, no matter how long, remains viable in the new position, then need for development of intrathoracic oesophagoplasty becomes less urgent and the external will remain the operation of choice following resection of any segment of the oesophagus for carcinoma.

KARL CONNELL

Unger, E.: Surgery of the Thoracic Part of the Oesophagus (*Zur Chirurgie des Oesophagus in Thorax*). *Berl. klin. Wchschr.*, 1913, I, 2090.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

In most cases of intrathoracic operations on the oesophagus the left pleura is opened; in transpleural procedures, the right pleura also is often opened, but with the aid of a differential pressure apparatus this complication may easily be avoided. Of the positive pressure apparatus, only those can be considered that leave the mouth of the patient free for further manipulations. Negative as well as positive pressure apparatus have the disadvantage of disturbing the movements of the lungs and moving the oesophagus with them. This disadvantage is avoided by Meltzer-Auer's insufflation. Section of the vagi cannot be avoided, but to avoid shock they should be touched with 5 per cent cocaine. Extensive resection, especially of the ribs in contact with the diaphragm, may cause marked disturbances of respiration. Unger resects the seventh or eighth rib and spreads the intercostal space, or the next rib may be simply incised.

If the tumor is located at the diaphragm an attempt should be made to unite the oesophagus and stomach directly. If the wall of the oesophagus is materially changed, by dilatation or inflammatory processes, the oesophagus should be removed or drawn transversely through the pleural cavity and sutured to the skin.

In tumors between the bifurcation and the diaphragm the tumor is removed, the lower end allowed to sink down toward the stomach and the

upper end drawn out at the neck; to avoid hæmorrhage a tampon may be placed in the bed of the œsophagus, coming out at the neck.

In tumors of the upper opening of the thorax the œsophagus is sectioned below the tumor, the lower end is closed, the upper sutured to the skin wound. A small tumor can be removed through the upper opening of the thorax, thus avoiding all possibility of infecting the pleura; if it is too large it must be removed through the pleural cavity.

Two cases are described: (1) In a case of carcinoma of the œsophagus below the left bronchus, the tumor was removed and the oral end drawn out through the neck; death occurred the second day from hæmorrhage apparently from a small jugular vessel. (2) The second case was a tumor the size of a walnut, 3 cm. below the bifurcation. After separating the œsophagus above the tumor, the oral end was drawn out through the neck, followed by the collapse and death of the patient. Boir.

SURGERY OF THE ABDOMEN

ABDOMINAL WALL AND PERITONEUM

Scharezky, B. G.: *Topographical-Anatomical Description of the Subumbilical Region, and Its Relation to the Origin of Traumatic Inguinal Hernia* (Topographisch-anatomische Beschreibung der Regio subumbilicalis im Zusammenhang mit der Frage der Entstehung der traumatischen Inguinalhernien). *Dissertation*, Charkov, 1913.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author has prepared specimens of the subumbilical region from 86 bodies and gives a detailed description of the anatomy of this region, especially with reference to the origin of traumatic inguinal hernias. The size of the external abdominal ring is no indication of the strength of the abdominal wall. But the size and form of the inguinal canal is of the greatest importance, as is also the development and method of insertion of the edge of the internal oblique muscle which bounds it on the median side.

If there is a narrow canal and the edge of the internal oblique is well developed and inserted in the crest of the pubis, the tension caused by abdominal pressure decreases the size of the canal and strengthens this part of the wall. A broad triangular canal the author thinks is pathological, especially if the part of the internal oblique that forms the boundary is not inserted into the crest of the pubis but passes higher up into the sheath of the rectus. The tendon of the rectus is in such cases generally small. In this way the abdominal wall at this place, the external abdominal ring, is reduced to the transverse fascia, which may be torn by strong abdominal pressure. At this point the peritoneum is so loosely fastened to the underlying tissue that it can easily be pushed forward and in a short time may form a hernial sac. The hernias produced by indirect trauma are always internal direct ones.

The author had an opportunity to treat three patients with traumatic hernia, all caused by lifting heavy loads. They were operated on four days, five months, and one and one-half years after the accidents. In the first case the region around the hernia was found soaked with blood; in both the other cases cicatricial changes had taken place around it.

RIESENKAMPFF.

Schwarzmann, E.: *Surgical Treatment of Ascites* (Zur chirurgischen Behandlung des Ascites). *Deutsche Ztschr. f. Chir.*, 1913, cxxiv, 546.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

After a short enumeration of the diseases in which ascites appears as a symptom the author gives a review of the methods of operation devised to overcome it. These are Talma-Drummond and Morison's omentopexy, with modifications, Ruotte's saphenopexy, the procedures which aim to establish subcutaneous drainage, and Eck's fistula, which is a direct side-to-side anastomosis of the vena cava with the portal vein.

Ruotte's operation consists in incising the saphenous vein 8 centimeters before it empties into the femoral and suturing its central end into an opening in the parietal peritoneum. This operation has been performed 15 times, almost half of which were successful. From 1906 to 1912, 14 cases of ascites were treated surgically at the second surgical clinic in Vienna. Omentopexy was performed in 13 cases, sometimes alone, sometimes in conjunction with fixation of the spleen or liver. There was recovery in 4 cases, improvement in 2, while in 7 cases, which had offered very little hope before the operation, there was no change. In the fourteenth case omentopexy was performed in conjunction with saphenopexy, but there was no improvement. The diseases in which operation for ascites was successful were beginning cirrhosis of the liver, tubercular peritonitis, and a case of tricuspid insufficiency. The author thinks it important to diagnose cirrhosis of the liver earlier than is usually done, and gives in conclusion a short résumé of the early symptoms as well as the methods of testing liver function.

VON TAPPENNER.

Seelig, M. G., and Tuholske, L.: *The Inguinal Route for Femoral Hernia; with a Supplementary Note on Cooper's Ligament*. *Surg., Gynec. & Obst.*, 1914, xviii, 55.

By Surg., Gynec. & Obst.

The authors point out that (1) high ligation of the sac, (2) a snug closure of the ring, and (3) aseptic healing; the prerequisites for successful repair of inguinal hernia, are equally essential in femoral.

They have dissected a pelvis and illustrated the anatomical relationships at the femoral ring to show clearly Cooper's ligament. Their technique is as follows:

1. The incision, three to four inches long, is made as in inguinal herniotomy, but prolonged nearer to the pubis.

2. The aponeurosis of the external oblique is divided in the direction of its fibers.

3. The upper flap of the external oblique, the conjoined internal oblique and transversalis, and the round ligament or spermatic cord are next retracted upwards and the lower flap of the external oblique downwards, thus exposing Poupart's ligament. The transversalis fascia, which is then in view, is divided and the edges retracted, which exposes the peritoneum and the neck of the sac.

4. The peritoneum is opened at the neck of the sac. The contents of the sac are withdrawn and allowed to re-enter the free peritoneal cavity. If the intestine or omentum be strangulated, cutting Gimbernat's ligament relieves the constriction.

5. A dressing forceps is introduced to the fundus of the sac, clamped and withdrawn, everting the sac and changing the femoral into an inguinal hernia; the sac is treated accordingly. If the sac be adherent to the thigh structures it does not evert easily, and the incision is then prolonged down the thigh and the sac freed.

6. A deep chromic suture is passed through Cooper's ligament, then through the lower flap of the transversalis fascia and the edge of Poupart's ligament; a second and third are passed more internally, the innermost picking up Gimbernat's ligament.

7. The closure of layers is the same as in inguinal herniotomy.

Kringel, O.: A Case of Solitary Rupture of the Mesentery (Über einen Fall von isolierter Mesenterialabreissung). *Dissertation*, Berlin, 1913.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

A three-year-old boy was run over by a wagon, both front and hind wheels passing over his abdomen. There was dullness in the right side of the abdomen, livid paleness, pulselessness, and severe collapse. Upon operation, the mesentery was found to be torn near the ileum through an extent of 35 cm.; 37 cm. of the ileum was resected and after 11 days the patient was discharged cured. If he had not been operated on he would certainly have died of hemorrhage.

The author gives some information as to contusions of the abdomen, and especially as to the solitary ruptures of the mesentery in soldiers, caused by contusions. The statistics for 1896 to 1906 are taken from Thöle, those for 1907-1910 from the report of the Prussian army. Of 286 cases in the first period, 141 were associated with injuries of the viscera, 79 being in the intestine, the other 62 divided approximately equally among the other abdominal organs. The mesentery was injured

alone only three times, and twice in conjunction with the intestine. Of these 141 cases, 96 were operated upon, the rest treated expectantly.

From 1907 to 1910 the number of cases was 96, 10 of which were not operated upon as the symptoms of shock disappeared after a time and there were no signs of injuries to the viscera; the remaining 86 cases were operated upon. There were isolated injuries of the mesentery in only 4 cases; all of which were mild and the outcome good—resection of the intestine was not necessary. Of these 4 cases, 1 was caused by a kick from a horse; 1 by a blow from the butt of a gun; and 1 by a heavy fall on a horizontal bar; the cause of the other is unknown.

Of the 30 cases that died after operation, 17 were injuries of the small intestine; 7 of the liver; 4 of the spleen; 1 of the stomach, and 1 was not reported.

From 1896 to 1906, 96 laparotomies were performed for contusions of the abdomen, of which 36 recovered and 60 died. From 1907 to 1910, 86 cases were operated on with 56 recoveries and 30 deaths.

The number of laparotomies for contusions of the abdomen has markedly increased, and the recoveries now almost double the deaths, due to the increase in the number of early operations.

Fritz Loeb.

GASTRO-INTESTINAL TRACT

Lange, S.: Practical Value of X-Ray Examinations of the Stomach. *Ohio St. M. J.*, 1914, x, 10.

By Surg., Gynec. & Obst.

Lange recounts the contention of Stiller that the X-ray bismuth stomach did not represent the true clinical stomach, his controversy with Groedel and the experiments of Groedel, Weber and Von Bergman proving that the X-ray stomach, though different from the previous conception of that organ, is identical with the clinical stomach.

An X-ray examination of the stomach must be complete to be of value, and the idea of the average patient that a single plate, made in a few moments, will give detailed information of his condition is an embarrassment to the work.

The condition of the patient's nervous system as influencing tonus cannot be disregarded. Distortions due to gas or feces in the colon must be recognized and eliminated. Spasm of the pylorus, or the entire pyloric portion of the stomach, simulating tumor is the chief disturbing factor in the cases which Lange has examined.

He makes the complete stomach examination in four parts:

1. The patient is given a small watery suspension of bismuth or barium during fluoroscopy, the effect of palpation and change of position being noted.

2. The stomach is then filled with bismuth or barium suspended in fermented milk, and the size, shape, position, and peristalsis are studied fluoro-

scopically, with palpation and changes of position, plates being made at varying intervals.

3. Gastric clearance is determined by repeated fluoroscopy or radiography. Either the single Rieder or double Haudek carbohydrate meal may be used. Fermented milk as a vehicle lengthens the time of clearance.

4. For gastric motility and the finer details of peristalsis the stomach is filled and a series of plates is made with the patient prone.

Lange prefers to make plates at longer intervals than is suggested by some observers.

The flat gastric ulcer is not directly recognizable by the X-ray method. Peristalsis is apt to be deeper than normal. There may be spasm of the pylorus and a six-hour residue. A deep constriction of the greater curvature opposite the ulcer may be seen. Such constrictions, however, may occur opposite the scar of a healed or excised ulcer, or as a result of spasm from hysteria, tabes, and intoxications.

In callous and perforating ulcer the radiological signs are more distinctive. Among these are: (1) Organic hour-glass stomach; (2) accessory pouch (nischen-symptom of Haudek); (3) deformity of the antrum by an old pyloric ulcer; (4) increased peristalsis and six-hour residue with obstructing pyloric ulcer; (5) very characteristic for fibrous obstruction at the pylorus is a greatly enlarged pars pylorica with a much distended pyloric antrum and evidences of hyperperistalsis.

The X-ray evidence of gastric cancer varies with the location and character of the growth. A medullary cancer of the cardiac portion of the stomach beginning in the greater or lesser curvature may be recognized comparatively early as a defect or deformity of the outlines of these parts. If on the anterior or posterior walls of the cardiac portion, it may escape recognition until it encroaches considerably on the lumen. Scirrhus in this region may shrink and contract the contour. Either type may produce hour-glass. Medullary growths at the pylorus may cause filling defects, interruption of peristalsis and delayed clearance, with six-hour residue. Large medullary pyloric growths may result in a long narrow pyloric channel, or the pars pylorica may seem to be completely absent. Scirrhous growths in the pars pylorica result in lack of distention without gross irregularities, absence of peristalsis and rapid clearance through a pylorus held open by infiltration. If a palpable tumor mass be present, its relation to the stomach may be determined by pasting wire on the tumor outline and then making the X-ray examination.

Diagnosis of gross lesions of the duodenum and gall-passages may be made. The duodenal cap may be distorted by adhesions or obstructed by the scars of an old ulcer. Early there is hyperperistalsis, with normal gastric contour and absence of the cap, if the lumen of the duodenum is greatly narrowed. Adhesive processes in the upper right quadrant of the abdomen tend to lift up the pylorus and pull it over to the right.

ALBERT MILLER.

Eusterman, G. B. : Incidence and Diagnosis of Complicating Factors in Gastric and Duodenal Lesions. *Am. J. Gastro-Enterol.*, 1914, iii, 111.

By Surg., Gynec. & Obst.

The material for the following study was obtained from cases operated on in the Mayo Clinic from 1906 to 1912, inclusive, and consists of 778 cases of duodenal ulcers, 324 cases of gastric ulcers, and 691 cases of gastric cancer. From a careful study of the cases at hand the author comes to the following conclusions:

Pyloric obstruction or stenosis of variable degree was present in an average of 30 per cent of all chronic simple gastric and duodenal ulcers, and in 54 per cent of all gastric cancers. This condition occurs chiefly in cases in which the ulcer is situated in or near the pylorus or in the first two inches of the duodenum. The diagnosis depends upon a history of vomiting and removal of retained food-material from the stomach; upon the demonstration after six hours on the röntgen plate of a residue of bismuth or barium sulphate administered in some suitable medium. Apparent obstruction may be due to pylorospasm. Extragastric causes are usually due to gall-bladder disease, complicated by perforation or adhesions and implicating the pyloric end of the stomach or duodenum.

Perforation was a complicating factor in 28 per cent of 778 cases of duodenal ulcers, in 25 per cent of the 324 cases of gastric ulcers, and in 3½ per cent of 691 cases of gastric cancer. The diagnosis is usually made on a history suggestive of ulcer, occasionally of cancer, associated with one or more attacks of acute epigastric pain, although slow chronic perforation may occur without severe pain. The diagnosis of cholelithiasis is often erroneously made in those cases in which there is an early perforation without the association of sufficient gastric disturbances suggestive or characteristic of ulcer. Perforating ulcer of the stomach is usually demonstrable on the röntgen plate.

Hæmorrhage in chronic simple ulcer of the stomach or duodenum is a less frequent complication than is generally supposed. Definite profuse melena or hæmatemesis, or both, was noted in 20 per cent of all duodenal and in 30 per cent of all gastric ulcers. In a total of 817 gastric and duodenal ulcers an average of 23 per cent gave evidence of gross bleeding from the stomach or bowel, or both. Conditions most likely to give rise to error in diagnosis are those cases of gall-bladder or appendiceal disease associated with gastric disturbances in which gastro-intestinal hæmorrhage—5 per cent and 2 per cent respectively—of various degrees may occur.

The accepted symptom-complex of gastric ulcer is often the precursor of gastric cancer. This association was definite in 41.8 per cent and irregular in 18.7 per cent of all gastric cancers in this series. Conservatively, in all cases of gastric cancer there is clinical evidence of a pre-existing ulcer in over 55 per cent. In about 60 per cent of malign-

nant tumors of the stomach there is pathological evidence of pre-existing ulcer. In numerous instances when the clinical history and gross appearance of the lesion was that of a benign peptic ulcer, definite microscopical evidence of malignant hyperplasia of the mucosa of the borders only was shown.

Hour-glass deformity occurred in 10 per cent of the gastric, one-half per cent of the duodenal ulcers, and one per cent of the gastric cancers. The diagnosis was usually made at the operating table and was rarely made clinically until the fluoroscopical screen and röntgen plate came into routine use.

Coincident or associated disease of the appendix, 25 per cent, or gall-bladder, 8 per cent, requiring additional operative interference, was present in 33 per cent of all cases of duodenal ulcers; and in 16 per cent and 4 per cent respectively, or in a total of 20 per cent of all the cases of gastric ulcers. Pancreatitis was noted in twelve instances in the former group and once in the latter. The pancreas was usually involved when perforation was present.

The presence or absence of metastases is of the greatest clinical import in the presence of probable gastric cancer. Even when metastasis has already taken place, external evidence is often lacking; that is, the presence of palpable glands in the left supraclavicular space, of an infiltrated navel, free fluid in the abdomen, palpable nodules on the anterior rectal shelf in the male or in the tissues above and behind the uterus in the female. In this series of 691 cases of gastric cancer which came to operation, metastasis had already taken place in 128, or 18 per cent.

J. H. SKILES.

Mayo, W. J.: Chronic Ulcers of the Stomach and Duodenum. *Tr. Internat. Surg. Ass., N. Y., 1914, April.* By Surg., Gynec. & Obst.

In the first period from 1893 to 1900, operation for pyloric obstruction was applied only to patients with marked pyloric narrowing, little differentiation being made in the chronic cases between ulcers in the pyloric end of the stomach and in the duodenum. The results were excellent.

The second period from 1900 to 1906 was marked by growth of knowledge resulting from surgical observation. During this period it was recognized that obstruction was a terminal condition and study of the trouble was taken up with a view to the earlier termination of a malady which exposed the patient to serious dangers and more or less constant disability and distress. There was much discussion of mucous ulcers and a variety of supposed lesions which were not the result of actual observations at the operating table but of an attempt to furnish a pathological basis for the symptoms complained of by the patient.

In the third period from 1906 to 1914 there was improvement in diagnosis, and development of better technique. The relation of the clinical symptoms to the lesion was shown in the light of operative experience. Great aid was obtained from the röntgen ray.

Up to Dec. 31, 1913, 1,841 cases of acute and chronic ulcers of the stomach and duodenum had been operated on (457 females, 1,384 males), demonstrating the early clinical view of a preponderance of females over males to be in error. Probably the large number of these supposed ulcers in women were the result of pyloric spasm due to gall-stones or intestinal lesions. In 636 of the 1,841 cases the ulcers were located in the stomach, in 1,205 in the duodenum. Multiple ulcers occurred only in 4 or 5 per cent of the cases.

The character of ulcers of the duodenum may differ in many respects from ulcers of the stomach. They are usually found in the upper two inches of the duodenum and many times with no crater such as exists in the stomach, but rather a discolored, moth-eaten patch, in the center of which is a slit or dimple-like ulcer, but with typical induration in the peritoneal and muscular coats. Incomplete protected perforations are common. Definite healing of the chronic ulcer of the stomach or duodenum is rare. Temporary subsidence of symptoms is often taken to be a cure, as is the case in cholelithiasis and appendiceal disease.

Gastrojejunostomy is the most generally successful operation. Ulcers should be excised when it is possible to do so without too much risk. Duodenal and gastric ulcers obstructing the pylorus yield equally good results following operation. The greater the distance of the gastric ulcer from the pylorus the greater the mortality and the less certain the cure. Ninety-eight per cent of the duodenal ulcers and 95 per cent of the gastric ulcers will be cured or greatly relieved by operation—the operative mortality of duodenal ulcers being one and one-half per cent; the operative mortality of gastric ulcers, including acute perforations, acute hæmorrhages, resections, etc., 3.8 per cent.

Steinharter, E. C.: Experimental Production of Gastric Ulcers by Intravenous Injection of Clumped Colon Bacilli. *Lancet-Clin., 1914, cxi, 87.* By Surg., Gynec. & Obst.

After discussing the work done by other men on gastric ulcer, the author describes the method he employed. The colon bacilli were clumped by using a one-twelfth normal hydrochloric acid solution and a twenty-four-hour broth culture, 2 ccm. of broth being used to one of hydrochloric acid. This solution was incubated for twenty-four hours and centrifuged; the sediment was washed twice with normal salt solution and then shaken up with 10 ccm. of fresh saline. The turbid fluid was injected intravenously into rabbits.

The following is a typical protocol: A large white rabbit injected with 4 ccm. died twenty-two hours later and was examined immediately. The stomach showed two erosions at the pyloric ring; the lining of the stomach was thickly covered with digested blood; all other organs were negative.

The results show that gastric ulcers and hæmorrhagic erosions can be experimentally produced by

intravenous injections of very small doses of clump colon bacilli. From this the author reasons that there is probably a continual absorption of the colon organism and its toxins through the intestinal wall. During constipation this absorption is increased and is the etiological factor in the production of gastric ulcerations in human beings.

EDWARD L. CORNELL.

Richter, H. M.: Congenital Pyloric Stenosis; a Study of Twenty-Two Cases, with Operation by the Author. *J. Am. M. Ass.*, 1914, lxii, 353. By Surg., Gynec. & Obst.

Nineteen of the cases reported by the author were of the hypertrophic type of pyloric stenosis and the other three were of the spasmodic type. In all the former a definite, firm, olive-shaped tumor was demonstrated at operation and in eighteen of them it was palpated and recognized before the abdominal wall was opened. There was no external evidence of inflammation and no attempt at fixation. There was no gradation between the tumor mass and the adjacent stomach and duodenum. The tumor is more constantly palpable clinically when the stomach is emptied either by vomiting or by a tube. The mucosa of the pylorus was relatively redundant in three cases in which it was carefully observed. The histological findings in one case which came to autopsy showed a simple hyperplasia of the circular muscular fibers with no change in any other structure of the pylorus.

The stomach, when not emptied before operation, was always found distended to a marked degree, the duodenum was always empty and collapsed. It was perfectly evident that the tumor formed a complete obstruction to the canal. In none of the cases was there any accompanying congenital malformation, although in one a particularly short mesocolon made it impossible to do a retrocolic gastrojejunostomy. Fifteen of the babies were males and all were the first born to the parents except one. There was no parental pathological condition that could have any bearing.

The onset of the trouble, in most cases, has been within two or three weeks of birth. It is usually abrupt with spitting up or vomiting, accompanied almost from the start with marked constipation and very soon with a startling loss of weight. These symptoms have been uniformly progressive and the progress has never been arrested for more than a few hours at a time. There has been no distention, rigidity, or other feature suggestive of a peritonitis. The lower abdomen has uniformly been found empty and passively contracted, the upper abdomen bulging and tense. Passing across the upper abdomen from under the left costal border toward the right extraordinarily marked peristaltic waves have always been easily shown. If not present on examination, they could always be induced by giving the babe food or water. They were so marked that they could readily be demonstrated to the audience in a large amphitheater. Finally

in eighteen of the nineteen cases the tumor could be readily palpated.

It is particularly important that the röntgen ray, as a diagnostic measure, be limited to determining the rate of emptying the stomach, not the patency of the stomach. The tumor causes a mechanical blocking of the pylorus and it is possible to pass a fair sized sound through the opening at operation, but the blocking is comparable to that seen in the urethra by a hypertrophied prostate gland. Therefore, to exclude a diagnosis of hypertrophied stenosis on the basis of the passage of bismuth is sure to lead to serious error. It is conceded that sufficient patency may exist to maintain life even after temporary total blocking has been evident. It is on this basis that we can account for the recoveries reported by competent observers. The recovery does not imply the disappearance of the tumor.

There is nothing in the nature of hypertrophic stenosis that essentially predicates a permanent closure and the author knows of no good reason why these tumors should not ultimately disappear. They are not neoplasms but simple muscular hypertrophies. The indication for operation is not strengthened by proving the permanency of the mass. The fact that it does not disappear quickly enough is the essential, absolute indication for surgical interference.

In this series of cases the mortality was 13.6 per cent. Of the 22 operations, 19 were typical posterior gastro-enterostomies, with 2 deaths, a mortality of 10.5 per cent. A submucous pyloroplasty was done on 2 babies and on 1 a division of the pylorus. Of the 3 deaths that occurred, 1 was essentially a result of the child's condition and represents an irreducible mortality that must prevail so long as patients are not clearly regarded as surgical cases. Two of the cases were clearly attributable to faulty technique. Of the 19 patients who survived operation, 1 died of what was diagnosed as an acute food intoxication. Two cases had post-operative sequelæ, necessitating reopening of the abdomen: one developed an acute intestinal obstruction eight weeks after the operation; the other had a volvulus of the entire small bowel. Both recovered from the second operation.

The patients are being carefully watched and the following is briefly the results shown so far: There was usually some vomiting during the first week following the operation. In nearly all the cases the vomiting ceased before the patient left the hospital, and without exception vomiting has not recurred in any case to date. There were no disturbances suggestive of intestinal indigestion. In the first few days following operation there was usually a loss in weight, but following this the gain in weight was pronounced and continuous. EDWARD L. CORNELL.

Van Lennep, W. B.: Jejunostomy. *Hahnemann Month.*, 1914, xlix, 1. By Surg., Gynec. & Obst.

The author reports a case of gastric cancer in which he performed jejunostomy with gratifying

results. In his experience, he has found it preferable to posterior gastro-enterostomy in malignant cases. The cases which give sufficient healthy tissue for an anastomosis between the stomach and intestine usually permit of a gastrectomy, while in the more extensive growths the condition of the patient is such as to make a quicker and simpler operation desirable. Bile and pancreatic juice have a free exit, the food goes into a portion of healthy intestine, where it is readily assimilated, and therefore feeding can be forced and the patient built up. With good technique, leakage need not be feared and the attachment of the intestine to the abdominal wall appears to cause no trouble, even though the case be one in which the fistula can be subsequently dispensed with, which is not the case with gastrostomy where the attachment interferes with motility more or less.

This operation is also indicated in those cases of benign ulcers which are too large to remove. In this way the stomach is put at rest and the ulcer given an opportunity to heal, provided there is no obstruction. The author does not wish to belittle gastrostomy and gastro-enterostomy, but their limitations must be recognized and jejunostomy employed when the former are not indicated.

EDWARD L. CORNELL.

Dieterichs, M.: The Mechanism of Invagination of the Intestine (Über den Mechanismus der Darminvagination). *Russk. Vrach*, St. Petersburg, 1913, xii, 1493.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Having had seven clinical cases, on five of which he operated, the author took up an extensive experimental study of the mechanism of intestinal invagination. First he studied normal peristalsis and antiperistalsis, following Prutz and Ellinger's experiments. Then 23 experiments were performed on rabbits and dogs for an investigation of physiological invagination.

The invagination was produced by electrical or mechanical stimulation. He observed that a piece of the intestine contracted spastically, and generally the anal, non-contracted section formed an umbrella-like projection and the contracted portion was invaginated into it. In this way invaginations as much as 3 cm. long occurred, but were generally freed again, after ten minutes at the most. He believes this is explained by contraction of the circular musculature of the intestine, and that the further progress of the invagination is caused by the contraction of the circular musculature, not, as other authors claim, by that of the longitudinal muscles. When the latter contract, the invagination is loosened, but since invaginations of different extent take place under the same degree of stimulation, there must be another factor involved. Peristalsis can hardly be held responsible as it stops when the animals are anesthetized; therefore he thinks it is the pendulum movement of the intestine. The invagination is larger or smaller according to

whether the pendulum movement is in the direction of the invagination or *vice versa*.

In order to find out how a physiological invagination is transformed into a pathological one he tried to establish artificial invagination and keep the intestine in that position. This could be accomplished only by close button sutures or a continuous suture, as the invagination was always freed again, even coming out between the sutures when they were placed far apart. The invagination remained only when the last loop of the small intestine was invaginated into the cæcum, so that the valve of Bauhin formed the neck of the invagination, probably because the continuity of the longitudinal musculature, necessary for freeing the invagination, was interrupted by the valve of Bauhin. Special conditions are also necessary to prevent the freeing of an invagination. These conditions are created when the muscle elements of the intestine are injured functionally and weakened, as the author proves by artificially induced enteritis.

It has been claimed that an invagination, once produced, necessarily increases, but the author denies this emphatically, as his experiments have proved the contrary and he comes to the conclusion that a physiological invagination is easily produced, but that it becomes pathological only when certain conditions are fulfilled: either the stimulation which produced the invagination must continue uninterruptedly or with only short interruptions, as is the case in tumors and diverticula of the intestinal wall, and in foreign bodies, parasites, etc., or the function of the intestinal musculature must be injured so that the balance between the action of the circular and longitudinal fibers is destroyed. This is the case in ulcer, hæmorrhage in the intestinal wall—*purpura hæmorrhagica*—and in functional disturbances from intoxication or infection: lead poisoning enteritis. From further experiments he concludes that for the production of a progressive pathological invagination both of these conditions must be fulfilled. VON HOLST.

Cope, V. Z.: The Early Diagnosis and Treatment of Ruptured Intestine. *Lancet*, Lond., 1914, clxxvi, 164.

By Surg., Gynec. & Obst.

When the intestine is ruptured as the result of a blow on or crush of the abdomen the symptoms can be considered as due to the supervention of shock, the occurrence of peritonitis, or the presence of gas or fluid in the peritoneal cavity. The symptoms in the order of their relative frequency are pain, vomiting, marked restlessness, persistent superficial respiration, and pain on deep breathing, shock, local tenderness, rigidity, distention, added dullness, rising pulse, diminished liver dullness, and occasionally melena and emphysema.

The majority of cases have to be diagnosed by the symptoms of peritonitis, of rapid or delayed onset. It is often delayed after rupture of the intestine because the intestinal paresis caused by the injury inhibits peristalsis and allows time for the exudation

of plastic lymph which seals the opening. Pain, when continuous and increasing in severity, is the most reliable symptom and is demonstrated in four ways: First, the expression; second, pain at the site of the lesion; third, pain evoked by deep pressure over the site of the lesion; fourth, in many cases the pelvic peritoneum as felt by rectal examination is painful on pressure. Vomiting of bilious material is said to be especially significant; diminution or absence of the liver dullness is a symptom which ought never to be waited for.

The author believes it advisable to open the abdomen on the suspicion of ruptured intestine if the following conditions be present: (1) When severe abdominal pain persists for more than about six hours after an injury, if the pain be accompanied by either (a) vomiting, especially bilious vomiting; or (b) a pulse gradually rising from the normal; or (c) persistent local rigidity tending to extend; or (d) deep local tenderness with shallow respiration; and (2) when abdominal pain is absent or only slight, but the pulse rises steadily hour by hour and the patient is very restless or listless. When marked diminution of the liver dullness occurs with any of the above symptoms, or if there be signs of free fluid in the abdomen, the indications for operation would be imperative.

The recognized treatment of ruptured intestine is operation and the best plan is to suture if possible. If the tear be too large for successful suture without narrowing the lumen of the bowel dangerously a lateral anastomosis may be done, while in many cases resection of the affected part is clearly required. If the duodenojejunal junction be the part affected, a gastrojejunostomy should be performed. The author believes (1) that irrigation with saline solution is inadvisable in cases operated on early, but that with late cases the matter is not of much consequence; and (2) that drainage is probably the safest plan. The author reports two cases, both operated on about twenty hours after the injury, both with rupture of the upper jejunum and with recovery of both.

D. C. BALFOUR.

Zander, P.: Critical Review of the Appendicitis Cases for the Last Three Years, at the Surgical Clinic of the University of Halle a. S. (Kritische Rückschau über die Appendicitisfälle der drei letzten Jahre in der chirurgischen Universitätsklinik zu Halle a. S.). *Arch. f. klin. Chir.*, 1913, cii, 944. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

In the last three years 308 cases of acute appendicitis were operated on at the clinic, 56 per cent in men and 44 per cent in women, with a mortality of 9.7 per cent. The cause of this large percentage was the preponderance of late operations. As there was general peritonitis in 19.6 per cent, early operation is advised. Prognosis is impossible without laparotomy. The expectant treatment is not justified for more than 24 hours, and only if the symptoms improve decidedly. In late cases operation is performed for abscess, progressive peritonitis, pure

inflammations of the appendix, and in severe cases of the so-called interval period.

The cardinal principles in operation for appendicitis are: (1) Early operation; quickness; removal of the diseased focus; as conservative an operation as possible, and general treatment. Irrigation and sponging are of equal value in the diffuse form. The loosening of fibrin deposits is rejected by the author, as well as Franke's radical operation. Murphy's method, consisting of quick operation, opening the abdomen through a small gridiron incision, removal of the appendix, thick drain in Douglas' pouch, small buttonhole incisions with thick drains, no irrigation, no sponging, complete closing of the abdominal wound except for the drain, and Fowler's position, seems to him the best because of its conservative nature and quickness. Fowler's position is the best for the discharge of the pus. As for the interval operation, it should be performed only for absolute economic or personal indications. Instead, it is better to wait for another attack and operate early.

WEICHERT.

Bendixen, P. A., and Blything, J. D.: Pneumatic Rupture of the Bowel. *Surg., Gynec. & Obst.*, 1914, xviii, 73. By Surg., Gynec. & Obst.

The authors report a case, occurring in their own practice, of multiple rupture of the bowel resulting from the application of the nozzle of a high-pressure air-hose to the anus of the victim, by a fellow-workman, and in addition give details of six other cases of a similar nature hitherto unpublished.

The lacerations of the bowel in this instance were 11 in number: 9 in the large and 2 in the small gut, and 1 tear in the mesentery. In length they varied from 2 to 7 inches. Operation was followed by recovery.

The points emphasized by the authors are: (1) That it is possible and often necessary to make a diagnosis in this form of accident from the physical findings alone, the feature of chief diagnostic value, aside from the local signs common to all severe intra-abdominal injuries, being the enormously distended, tympanitic abdomen; and (2) that this is a type of industrial accident that is becoming quite frequent since the introduction of compressed air in modern shops, and that strict means should be taken to guard against its occurrence, as it is always the result of either gross carelessness or rough practical joking.

Rotter, J.: Surgical Treatment of Carcinoma of the Colon (Zur chirurgischen Behandlung der Koloncarcinome). *Arch. f. klin. Chir.*, 1913, cii, 651. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author reports 160 cases from 1893 to 1912, 79 of which were operated upon radically and 81 which could not be so operated upon, either because the tumor was so far advanced that it could not be completely removed or because the patient came to the hospital suffering from ileus and died as the result of the operation for ileus.

Rotter agrees with Körte, Petermann, and Anschütz that if ileus is present the operation should be limited to the creation of a faecal fistula, since these patients are so weak that they can not stand anything more; but even the relatively simple procedure of making a faecal fistula gives, in Rotter's statistics, a mortality of 44 per cent. Enterostomy in ileus gives 60 per cent, and advancement and resection 70 per cent. However, the results of the radical operation in cases where there was no ileus were very satisfactory: of the 79 patients operated on radically 15 died, or 19 per cent.

In all the tumors of the cæcum and ascending colon the end of the ileum and the entire ascending colon were removed and the ileum implanted end-to-side or side-to-side into the transverse colon—seventeen operations of this kind gave a mortality of 17 per cent. The free end of the transverse colon was formerly closed by crushing, ligation, and invagination, recently, by continuous suture and invagination.

In carcinomata at the middle of the transverse colon or below, Mikulicz' advancement was performed in some cases and primary resection with circular suture in some. Of 27 cases operated by Mikulicz' method in two stages there was a mortality of 18 per cent, while of 21 by circular suture, 6 died. Circular suture is absolutely contra-indicated by much fat in the intestine, an intestine very much filled with feces, impossibility of complete mobilization, and suture without tension. In 11 cases in which the transverse colon was united to the descending colon end-to-side or side-to-side there was a mortality of 10 per cent. Ileostomy with exclusion of a segment of the intestine was performed three times with good results in cases in which the ends of the intestine could not be sutured without tension.

ADLER.

Terrell, E. H.: The Radical Treatment of Hemorrhoids under Local Anæsthesia. *Internat. J. Surg.*, 1914, xxvii, 12. By *Surg., Gynec. & Obst.*

The author states that he is now performing most of his hemorrhoidal operations under local anæsthesia. He uses novocaine or a combination of this with quinine and urea. Most of the patients are treated in the office and are enabled to continue their daily occupations.

The technique used is as follows:

The largest pile is brought down, cleansed with an antiseptic solution, and infiltrated with a solution containing one per cent quinine and urea and about one-tenth per cent novocaine. A clamp is applied and fine linen ligatures placed in two or more sections, depending upon the size of the tumor. The most important ligature is the one placed in the uppermost portion of the hemorrhoid, for here the main blood supply enters. In fact, the others are often discarded altogether. With a sharp pair of curved scissors the pile is cut off close to the ligatures, leaving sufficient room, however, to prevent slipping. The stump is inspected to see that there

is no undue bleeding and returned above the sphincters. The patient should lie down for a few minutes and then may be allowed to go about his business. Seldom do patients treated in this way complain of pain. Occasionally there is a slight throbbing sensation for a few hours and some soreness, but quinine and urea often retains its anæsthetic effect for several days and is sufficient to keep the patient comfortable, if a proper technique has been carried out. In four or five days after the first hemorrhoid is removed, another is treated in the same manner, and so on in succession until the patient is cured.

The parts must be handled as gently as possible, for post-operative pain is often due to unnecessary traumatism. Another factor in the production of pain after operations for hemorrhoids is that portions of cutaneous tissue are included within the loop of the ligature.

EDWARD L. CORNELL.

LIVER, PANCREAS, AND SPLEEN

Ménel, E.: Large Tubercular Abscess of the Liver, and Its Clinical Diagnosis (Le gros abcès tuberculeux du foie et son diagnostic clinique). *Toulouse méd.*, 1913, xv, 277. By *Journal de Chirurgie*.

Tubercular abscess of the liver is rare; therefore it is not generally taken into consideration in the differential diagnosis of soft tumors of the liver. There are no special signs to distinguish it from ordinary abscess of the liver except the absence of fever and its slow development. These would indicate it to some degree, especially if there is no eosinophilia and if Weinberg's reaction is negative. These signs would exclude hydatid cyst, as is illustrated by the following case:

A young man of 25 noticed a small tumor developing in the right hypochondrium, and in a few weeks it had reached the size of a mandarin. It was painless at first, but later became sensitive and finally painful, which led him to consult a physician. On examination a tumor the size of a small orange was found under the anterior abdominal wall, absolutely immobile, painful on pressure, and showing no hydatid thrill. It was round, not nodulated, and evidently intimately connected with the border of the liver. Ménel immediately thought of hydatid cyst, but there was no eosinophilia and Weinberg-Parver's reaction was negative. Then the author discovered a sign which has always aided him in the diagnosis of tubercular abscesses in the glands or elsewhere: a feeling of peripheral induration, with an irregular depression in the center. Moreover, the patient's facies was indicative of tuberculosis, and there were signs of localized tuberculosis at the right apex, therefore, a diagnosis was made of tubercular abscess of the liver. This diagnosis was confirmed on operation which showed pus that appeared tubercular. The pocket, which was as large as a man's fist, occupied the convex surface of the liver. After being emptied out a large drain was left. The result was perfect. The drain was removed on the ninth

day and the pocket closed rapidly; at the end of six weeks when the patient left the hospital only a small fistula remained, which seemed to show a tendency to

close completely. A cobra was inoculated with some of the pus and when killed three weeks later showed very distinct tubercular lesions. J. DUMONT.

SURGERY OF THE EXTREMITIES

DISEASES OF THE BONES, JOINTS, MUSCLES, TENDONS. CONDITIONS COMMONLY FOUND IN THE EXTREMITIES

Gallie, W. E., and Robertson, D. E.: The Periosteum. *Canad. M. Ass. J.*, 1914, iv, 33.
By Surg., Gynec. & Obst.

The authors tell of a series of experiments designed to test Macewen's theory of the function of the periosteum. These consisted of operations on animals, in which the bones were denuded of periosteum, or enveloped in tin foil and other materials underneath the periosteum. In another series, the bones of young puppies were surrounded with metal rings or tin foil, placed under the periosteum and after the animal had grown considerably the specimens were recovered. In a third series, the bones were injured by saw cuts or fractures and the results observed when the injured areas were surrounded with periosteum, tin foil, steel plates, or wax. The conclusions arrived at were in agreement with Macewen's theory that periosteum acts merely as a limiting membrane and is not osteogenic. Osteogenesis appears to be solely a function of the endosteum. In relation to the making of bone grafts the absence of periosteum in small grafts produces no ill effect as the authors succeeded in getting all of a series of grafts to take, in spite of the complete removal of the periosteum in each case.

Wagner, G. A.: Family Chondrodystrophy; Etiology and Pathogenesis of Chondrodystrophy (Über familiäre Chondrodystrophie: Beitrag zur Ätiologie und Pathogenese der Chondrodystrophie). *Arch. f. Gynäk.*, 1913, c, 70.
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author reports a case of direct transmission of chondrodystrophy from mother to child. For the past few years the influence of heredity and family predisposition in this disease have become better known. The transmission is generally from father to child; only 11 cases from mother to child having been reported. Heretofore, too much emphasis has been placed on the changes in the skeleton; the whole organism, especially the function of the glands with internal secretion, should be studied. Recent investigators agree that achondroplasia has nothing to do with rickets.

The histological picture shows irregularity in the columns of cartilage cells, which are pushed away from each other, especially in the peripheral part as if the periosteum had been driven into the cartilage. Whether it is a primary abnormality of

development in the cartilage, a foetal chondritis, or whether it is due to bacteria, is not known. The author believes that this disturbance in endochondral bone formation is associated with abnormally strong tension in the direction of the long axis of the bone by the hypertrophied muscles, and that this causes micromelia.

It is not known how much the internal secretory glands have to do with chondrodystrophy, but it is certain they have some influence. Chondrodystrophy cannot be regarded as a premature osteogenesis caused by hyperthyroidism, for an enlarged thyroid has never been demonstrated in connection with it, and the symptoms are in direct contrast to those of Basedow's disease, which is due to hyperthyroidism. The author believes it is due to a hyperfunction of the reproductive glands. It is certain that hyperfunction of these glands can cause abnormal development of the muscles and genitalia. This genital hyperfunction produces a disturbance resulting in endochondral growth of bone and micromelia; the latter is increased by abnormally strong traction of the hypertrophied muscles. RITTERSHAUS.

Mutel.: Pathogenesis of Idiopathic Cysts of Bone and Swollen Callus (Considérations sur la pathogénie des kystes essentiels des os et des cals soufflés). *Rev. d'orthop.*, 1913, v, 423.

By Journal de Chirurgie.

Mutel endeavors to explain the pathogenesis of idiopathic bone cysts. There is perhaps no more complex and confused question in bone pathology than that of nonparasitic cysts of the long bones. Idiopathic cysts must be distinguished from parasitic cysts caused by echinococci and cysticerci, from the cysts of attenuated osteomyelitis, which are rather subperiosteal than intra-osseous, and from the neoplastic pseudocysts due to the softening and partial liquefaction of certain neoplasms of the bone.

Mutel concludes from his investigation that idiopathic cysts of the bones and swollen callus are two similar benign affections, with the same etiology, found especially in the young and at the juncture of the diaphysis and epiphysis. The diagnosis is difficult and yet of the greatest importance; the disease with which it is most apt to be confused is sarcoma. All possible clinical and radiographical data must be obtained, supplemented by an examination of the living tissue, if necessary, in order to avoid a serious and irreparable mutilation. Bone cysts may be treated simply by careful curettage, by complete immobilization, or even puncture followed by medicinal injections.

In regard to pathogenesis, Mutel gives the following conclusions: Bone cysts and swollen callus do not show any signs of new-growth to explain their origin. There is generally a history of traumatism, which may have acted on a bone already diseased or on a healthy one. If it occurs to a bone already affected with fibrous osteitis it hastens its local development and causes a deviation in the form of a cyst, or if it is applied to a healthy bone it produces more or less extensive attrition, but the reparative processes are deficient. The traumatism may involve a region of the bone that is supplied by terminal arteries; because of the absence of a collateral circulation a bruised fragment is bathed in blood, it is liquefied, and the blood, as it cannot be absorbed, becomes encysted. Or an accidental cause may exaggerate the phenomena of absorption which are combined with those of apposition in all repair of bone; this cause may be a defective immobilization, the lack of immobilization, or a too vigorous massage.

However ingenious, Mutel's hypothesis may be, it seems to depend too exclusively on the idea of trauma, and does not sufficiently explain the dystrophic or inflammatory condition which is the origin of all so-called idiopathic bone cysts.

ALBERT MOUCHET.

Haller: Osteomyelitis of the Astragalus (*Ostéomyélite de l'astragale*). *Cong. de l'ass. franç. de chir.*, Par., 1913, Oct. By *Journal de Chirurgie*.

Haller reports a case of primary osteomyelitis of the astragalus, which is a rare disease, as only five cases have been published. The author has been told of two other unpublished cases, which makes a total of eight cases; one case in a man; the rest in women. Streptococci and staphylococcus aureus were demonstrated in two of the cases; necrosis is frequent. In secondary osteomyelitis the lesions are peripheral, instead of being central, as in the case under discussion; there are no special symptoms; although tuberculosis is generally suspected and operation is the only means of eliminating this supposition. Radiography is the only means of diagnosis. Operation should be performed as quickly as possible—drainage and sometimes astraglectomy.

J. DUMONT.

Fitzwilliams, D. C. L.: Syphilitic Affections of Bones in Childhood. *Clin. J.*, 1914, xliii, 33. By *Surg., Gynec. & Obst.*

The terms congenital and hereditary applied to syphilis are misnomers, as all forms of syphilis are acquired either before or after birth. The different manifestations in the young and in the adult are due to difference in resistance and to structure of the tissues, especially of the bones. The affection called "syphilitic epiphysitis" is better described by the term osteochondritis because the epiphysis is not affected. The periosteum or perichondrium of the entire length of the bone is affected, but the symptoms are referred to the joint region because

the muscular attachments there cause pain on motion. The relative frequency of location is in the following order: humerus, radius and ulna, femur, tibia and fibula. It may occur in the perichondrium of the laryngeal cartilage and prove fatal. The patients are practically always less than six months old.

In syphilitic dactylitis, which is rare, there is thickening around the joints of the fingers and thumb, especially the proximal side as shown by röntgenogram; there is no pain, and the bones do not break down and discharge. It is rarely seen in children over three years of age.

Periostitis may be local or general. The patient is usually over four years old. The local form is commonest on the anterior tibia and probably starts with trauma. The node of new bone is single and does not surround the bone as a sarcoma. It is tender but not painful. There is a diffuse or generalized form in which the periostitis involves the entire shaft. The bones are not very tender but there is vague pain, especially at night. This is the form in which occurs the anterior saber-like bowing of the tibia, distinguished from rachitic bowing, which is sharper and just above the ankle. There may be an increased growth in the length of the tibia, noticeable only when the disease is unilateral, due to increased vascularity on the shaft side of the epiphyseal plate.

Syphilitic osteomyelitis is a gummatous manifestation of the disease. The entire thickness of the bone is involved. The bone increases in size by formation of new bone externally while destruction goes on inside. It may resemble sarcoma but is not as well circumscribed as that growth. Spontaneous fractures occur.

W. A. CLARK.

Boorstein, S. W.: Syphilis of Bones and Joints; with a Report of Ten Cases. *Surg., Gynec. & Obst.*, 1914, xviii, 46. By *Surg., Gynec. & Obst.*

The writer gives a short résumé of the facts known up to recent date of the pathology, symptoms, radiographical findings, diagnosis, and treatment of this condition. He urges the importance of placing bone and arthritic cases coming under the observation of the orthopedist in the literature so that early diagnosis can be made. He adds four cases of Charcot's disease to the literature; one of them is a vertebral osteo-arthropathy with destruction of the body of the second cervical with pressure paralysis. He emphasizes the following points in the pathology:

1. Bone lesions of hereditary syphilis take the form of osteochondritis with gelatinous masses under the periosteum with frequent necrosis, while in late hereditary syphilis there is the cortical thickening with calcareous deposits beneath the periosteum.

2. Acquired syphilis shows the same findings as late hereditary: (a) there are bone gummata and the periosteum is markedly thickened; (b) hereditary joint lesions take the form of exudative arthritis.



Fig. 1. (Picqué.) Incisions to open a phlegmon of the palm.

3. Acquired syphilitic joint lesions are rarely found in the secondary stage; when present they give rise to hydrops. In the tertiary stage, the bones and joints are involved and so either the synovial form is present or the bones present marked hyperostosis. The author reports two cases illustrating acquired syphilitic joint lesions simulating tuberculosis, where distinct bony changes in the radiograms involving mainly the periosteum are present.

Picqué R.: Surgical Treatment of Infections of the Palm of the Hand (*Traitement Chirurgical des infections de la paume de la main*). *J. de chir.* 1913, xi, 409. By Surg., Gynec. & Obst.

There are few surgical conditions which require a more extensive knowledge of anatomy and finer application of deductions drawn therefrom than infections of the palm of the hand. Picqué, by means of good illustrations and clear text, discusses the anatomical considerations in regard to the synovial sheaths, the abnormal communications of these sheaths and the deep cellular tissue of the palm in their bearing on the ascending course of infections. The important relationship of the tendon sheaths to the structures of the palm, the wrist, and the forearm are described, after which the author tells of his operative technique which is as follows:

First, it is necessary to differentiate a simple phlegmon of the palm, i.e., dorsal swelling, per flexion of the fingers, from an infection of the tendon sheaths: intense pain, claw-hand from fixed flexion,

high fever. The phlegmon of the palm demands that the deep layers be opened; this the author accomplishes by the same incision he uses to expose the deep palmar arch. This incision runs from the top of the V of the hand to the second interdigital space, exposing the flexor tendons of the four fingers. The incision is carried down to the superficial, palmar fascia which is in turn incised from below upward on a grooved director. The termination of the cubital artery is cut between ligatures; full exposure of the second interspace being made, the flexor tendons being left untouched. If the phlegmon has its start from near the annular ligament, a supplementary palmar incision is made, beginning at the flexure fold below the wrist and running along the hypothenar eminence external to the flexor tendon of the fifth finger. Drainage is applied to the deep layers of the palm, the tendons being easily avoided.

The suppurative palmar synovitis is conceived of as having three stages: (1) Digital synovitis; (2) palmar synovitis; (3) phlegmon of the forearm. These conditions may exist in any stage, and frequently the first is rapidly followed by the second and third. To illustrate this technique, the author cites an imaginary case as follows:

A prick on the patient's little finger was followed by swelling and pain fixation of the flexor followed. The finger is incised on its palmar surface, the tendon sheath found involved is opened and pus escapes. The next day, fever persists, the tumefaction has spread to the entire palm, the hand assumes the characteristic fixed flexed position of fingers — palmar synovitis is present.

By careful manipulation and palpation, an estimate of the degree of involvement is formed; if pressure at the external border of the hypothenar eminence causes a wave to pass towards the digital plane an internal palmar incision in the axis of the little finger from the summit of the V of the hand to within 1 cm. of the root of the little finger is indicated. The muscle is drawn to the inner side, and the tendon sheath opened. The danger is in wounding the superficial palmar arch at the upper angle of the wound.

If similar signs of pus are present in the forearm, an internal antibrachial incision is made parallel to the bone, immediately outside the vessels upon the convexity of the flexor tendon; the incision extends upwards 6 cm. from the inferior fold of the wrist. The middle compartment of the infected tendon sheath is opened with a blunt instrument after drawing the flexor tendons outward and exposing the sheath deep under them and towards the carpal canal. The infection may be limited to these regions; however, if it extends to the radial sheath, that region is opened in similar manner by making an incision parallel and internal to the radial vessels; avoiding the vessels, the retrotendinous cul-de-sac is located and opened. The external palmar incision is begun 1 cm. outside the summit of the V and runs to the root of the thumb. The

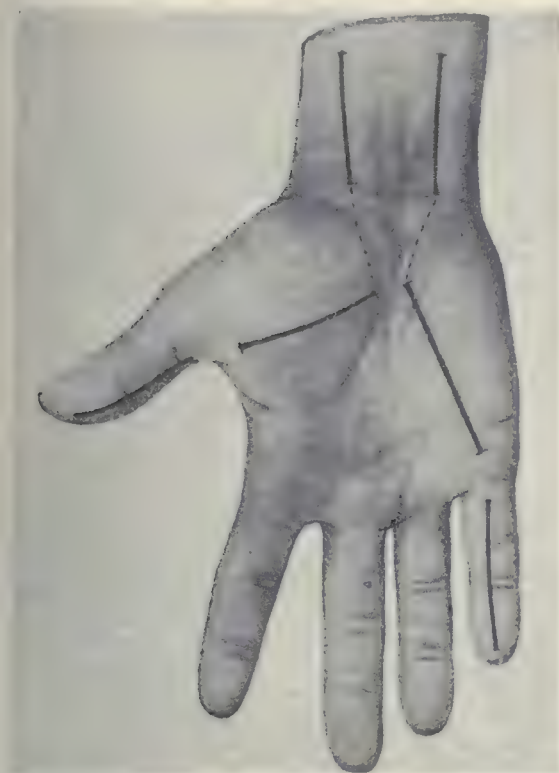


Fig. 2. (PICQUÉ.) Incisions to open a suppurative palmar synovitis.

short flexor of the thumb is cut through in order to reach the synovial sheath. The thenar branches of the median nerve are spared unless the incision attacks the annular ligament.

After thus thoroughly opening the sheaths, suitable drainage must be provided for. The author condemns pulling drains under the annular ligament. Usually the incisions described suffice, but if the infection diffuses towards the cellular space in the forearm or towards the wrist-joint, section of the annular ligament should be done at once because the carpal canal is a most dangerous place for pus to stagnate on account of its direct relation to the wrist-joint and its indirect relation to the forearm below the pronator quadrates. The functional result following division of the annular ligament is good.

If the infection still spreads up the forearm, the two lateral incisions are extended upward as far as necessary and transverse subtendinous drainage provided for.

If there is a suppurative arthritis of the wrist-joint, one or two supplementary dorsal incisions are made after the technique of D'Ollier or Kocher and the joint drained by "X"-drains.

The author closes his article with a brief review

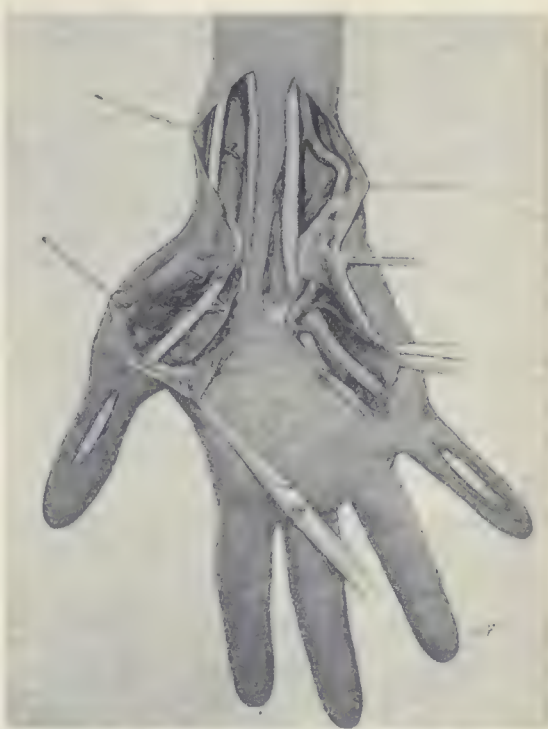


Fig. 3. (PICQUÉ.) Complete opening by section of the annular ligament.

of a typical case occurring in his practice and a discussion of the advantages of his technique over that of Lecène.

ELLIS FISCHEL.

Oberst, A.: Focal Tuberculosis of the Bones of the Extremities; with Special Reference to Its Metaphyseal Location (Die herdförmige Tuberkulose der grossen Extremitätenknochen, mit besonderer Berücksichtigung der metaphysären Lokalisation). *Deutsche Ztschr. f. Chir.*, 1913, cxxiv, 431. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

In the treatment of bone and joint tuberculosis, the former customary extensive operations have lost ground in favor of more conservative methods, and at present, heliotherapy is receiving a great deal of attention. A close examination of bone and joint tuberculosis shows that the disease generally originates in the metaphysis, which accords with the fascicular arrangement of the blood-vessels in this region of the bone. Modern röntgen diagnosis makes it possible to find this focus early, before there has been any great dissemination of the tuberculosis. It can be distinguished from a focus due to chronic osteomyelitis. In such cases there should be no hesitation in removing the diseased focus at once, in order to prevent its extending, and, particularly, its breaking through into the neighboring joint — heliotherapy will hasten the ultimate recovery.

In disease of the hip-joint the infection generally comes from a focus in the metaphysis of the femur, more rarely from one in the epiphysis or in the upper articular surface. In the knee-joint, foci in the metaphyses of the tibia and femur are most frequent, while the ankle-joint may become diseased from a focus in the metaphysis of the tibia or fibula. In calcaneus, there may be foci in the body, the tuberosity, or the anterior-process. In the shoulder-joint, primary foci in the metaphysis of the humerus are less frequent than primary synovial tuberculosis. The elbow-joint is frequently infected from the metaphysis of the humerus or ulna, and in these cases it may be observed, that as age increases, the primary focus has a tendency to approach the joint and the olecranon. As the humerus and ulna are both supplied by the deep humeral artery, there are generally two primary foci in these two locations. In the wrist-joint, tuberculosis generally begins in the metaphysis of the radius.

KIRSCHNER.

Hammond: Heliotherapy of Rollier as an Adjunct in the Treatment of Bone Disease. *Am. J. Orth. Surg.*, 1913, xi, 269. By Surg., Gynec. & Obst.

The method of Rollier in Switzerland is the exposure to the direct rays of the sun not only of the bone sinuses, especially tubercular ones, but the entire body of the patient. He begins by short exposures to accustom the skin to the heat rays and gradually increases the exposure to seven hours a day. It is contended that high altitude, 1200 to 1500 meters, is necessary for good results. Out of 450 closed cases of surgical tuberculosis, 393 were cured, 41 improved, 11 remained stationary, 5 died. Of 200 open cases, 137 were cured, 29 improved, 14 remained stationary, 20 died. The author treated 60 cases at a sea level hospital in Rhode Island by heliotherapy and noted decidedly better results over the previous year as shown by average weight, hæmoglobin percentages, and intangible clinical signs.

W. A. CLARK.

Segale, C.: The Regeneration of the Synovial Membrane and the Joint Capsule (Über die Regeneration der Synovialmembran und der Gelenkkapsel). *Beitr. z. klin. Chir.*, 1913, lxxxvii, 259. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Segale points out that the synovial membrane has no endothelium and has a peculiar place among connective-tissue formations. His experiments in regard to the regeneration of synovial membrane and joint capsule show that an injury of the capsule heals and cicatrizes from the pericapsular connective tissue, while wounds of the synovial membrane heal by regeneration from the edge of the wound. The regenerative process closes on the fifteenth day, because then the synovial shows a marked differentiation into an internal and a fibrillar layer. In the reparative process the tissue of the capsule, in contrast to that of the synovial, is entirely passive. The blood which is poured into the joint cavity in injuries is quickly absorbed.

GRUNE.

Bulkley, K.: Pneumococcic Arthritis. *Ann. Surg.*, Phila., 1914, lix, 71. By Surg., Gynec. & Obst.

An extensive report is given of 172 cases collected from the literature, to which the author has added one case coming under his own observation.

The average frequency of pneumococcic arthritis is one in eight hundred cases of pneumonia; it is more common in infancy than in any other period of life; males are more frequently affected than females. An attenuated virus or partial immunity of the host favors the occurrence of an arthritis. Trauma and previous joint disease play an important rôle in the causation. Seventy per cent of all cases are associated with pneumonia, about 93 per cent following and 7 per cent preceding the lung lesion, the most common date of occurrence being within the first two weeks from the onset of the pneumonia.

The portal of entry of the pneumonic infection is usually from the mucous membranes of the structures connected with the mouth, nose, or pharynx. The path of infection is usually the blood stream.

Seventy-five per cent of the cases analyzed were monarticular, twenty-five per cent polyarticular. The large joints, as the knee and shoulder, were more frequently affected than the smaller ones; the lower extremity more frequently involved than the upper. In none of the cases analyzed was there an infection of the acromioclavicular joint or the vertebral column.

The exudate varies in character from a serous to a serofibrinous or serosanguinous fluid to the more commonly found thick, creamy, greenish pus. A large majority of pneumococcic joints are suppurative in character. The primary focus in the joint may be either in the synovial membrane or in the end of one of the bones comprising the joint. The symptoms differ but little from those of any other septic arthritis. Severe toxæmia usually accompanies the process but it may be of such low grade infection as to closely resemble a tuberculous or gonorrhœal joint. In 45 per cent of the cases complications other than pneumonia were present, the most common being endocarditis, pleurisy, and empyema, meningitis, pericarditis, and septicæmia.

The diagnosis can only be substantiated by an exploratory aspiration and bacteriological examination by smears, cultures, and animal inoculation. A pneumococcic arthritis must be differentiated from other acute suppurative joint conditions, tuberculous arthritis, gonorrhœal arthritis, syphilitic arthritis, and acute rheumatic arthritis.

The prognosis is better in the young than in older patients but the outlook is always grave. In this series there was a mortality of 24 per cent in the monarthritis cases and 72 per cent in polyarthritis and an average mortality rate of about 50 per cent. The prognosis as to joint function is usually good. The treatment should invariably be radical, consisting of aspiration, arthrotomy, resection, or amputation, as the condition may require. Aspiration will suffice in non-suppurative

cases only, except as a diagnostic procedure; autogenous vaccines and immune sera may also be of service.

R. B. COFIELD.

Rosenau, E. C.: Relation of, and the Lesions Produced by the Various Forms of Streptococci, with Special Reference to Arthritis. *Illinois M. J.*, 1914, XXV, 11. By Surg., Gynec. & Obst.

The author discusses the transmutation of pneumococci and streptococci with the various lesions produced by them and intermediate forms. Streptococcus viridans, which he has converted into a pneumococcus by animal passage, is considered as intermediate between streptococcus hæmolyticus and the pneumococcus. Likewise, if it is possible for bacteriologists to distinguish pneumococcus from streptococcus the former has also been transformed into the latter, and the bacteria so produced have all the characteristics recognized as belonging to them.

A hæmolytic streptococcus, isolated from the tonsils of a scarlet fever case, was made to produce arthritis repeatedly, with: bacteria found in the small blood-vessels around the joint; then exostoses, atrophy, and necrosis of cartilage. From these a streptococcus viridans was produced which had no affinity for joints, but did produce a typical endocarditis with hæmorrhages into the valves. The same organism was further changed into a pneumococcus, producing neither of the above lesions but a rapidly fatal pneumococæmia.

From fourteen out of sixteen cases of acute rheumatic fever, organisms closely resembling those described by Payne and Poynton were isolated from the joints, in four of seven from the blood, and in two cases from the stools. Injection into animals produced fever, arthritis, and endocarditis, repeatedly. At a certain stage of virulence there is a marked affinity for the muscles, with a resulting myositis of varying grades; further passage causes complete loss of this characteristic. One type resembling micrococcus rheumaticus caused only a simple endocarditis and arthritis. The three types from "rheumatism" have been converted one into the other.

One strain of pneumococcus, which had been isolated eight years previously by Neufeld, had been kept virulent and described by Cole as one having fixed properties, was converted into a streptococcus, which, instead of producing death by pneumococæmia, produced arthritis and in one case, cholecystitis. He shows streptococci having a marked affinity for stomach mucosa, producing gastric and duodenal ulcers in rabbits, dogs, and monkeys, the ulcers being found in the lesions as early as twenty-four hours and as late as one month after intravenous injection. From four indurated gastric and duodenal ulcers but few organisms were obtained, principally staphylococci. In two, streptococci were found, one strain of which showed a marked affinity for stomach mucous membrane of dogs and rabbits.

C. A. STONE.

Billings, F.: Clinical Aspect and Medical Management of Arthritis Deformans. *Illinois M. J.*, 1914, XXV, 14. By Surg., Gynec. & Obst.

Billings considers arthritis deformans, or rheumatoid arthritis, to be primarily of infectious origin and as shown by Rosenow, Payne and Poynton is usually due to some form of streptococcus. Since the different forms of streptococci are produced, possibly by conditions in the tissues, it is rational to believe that in different people different strains may be grown which cause either endocarditis, acute arthritis, chronic arthritis, etc., as the case may be.

There is much confusion in anatomical classification. Various anatomical changes may be found in the same case, most likely due to the three different sources of the blood supplies of the joint structures, hence the varieties of pathology in chronic joint disease. He believes the muscular atrophy and contracture is due to a chronic myositis instead of from nervous influence or as a secondary thing. Sometimes muscles are affected without involvement of the joints, as in the biceps or erector spinæ. Histological examination of these muscles shows chronic myositis. Cultures sometimes yield coccal forms of organisms. The secondary cause of the trouble is probably faulty metabolism manifested by general debility, etc., with a protracted illness possibly due to mismanagement in treatment and too much medication. There are, however, some changes which are not understood, where a number of bones have become fused into one mass.

For the above reasons, the author thinks arthritis deformans a clinical entity which is caused by a chronic focal infection, generally in the nose, throat, or mouth, rarely elsewhere. The streptococci found are capable of mutation. This clinical entity may be differentiated from other chronic arthritides by thorough examinations.

The first examination of the patient probably shows arthritis deformans instead of some other chronic joint trouble. This settled, the next step is to discover the source if possible and remove it. If there have been frequent attacks of tonsillitis and the tonsils look abnormal, Billings advises their removal; even if no other focus is found he thinks it is well to remove them anyway. The tissue should be used to make cultures and to obtain autogenous vaccines which are used to give the patient injections. He thinks stock vaccines and phylacogen are useless. Vaccines should be considered the least important part of the treatment. After removal of the apparent cause an effort should be made to improve the personal hygiene: general nutrition, nervous balance, variety of food, sunshine, etc., then passive and later active motion. Deformities should be corrected by operation if necessary. An attempt was made by the author to use a prepared horse-serum, but in a few cases anaphylaxis became so alarming that further attempts were given up. Even in those cases where a cure is not possible the writer thinks the course

of the disease can be checked. The most difficult thing to be overcome is the chronic muscular change; even here, however, autogenous vaccines obtained from local cultures promise better results. The case demands long and careful watching.

C. A. STONE.

Gillette, A. J.: The Importance of Orthopedic Treatment in Tuberculous Joints, Based upon Twenty-Five Years' Experience in Four Thousand and Ten Cases. *J.-Lancet*, 1914, xxxiv, 4.

By Surg., Gynec. & Obst.

Gillette reviews his experience in the treatment of 4,010 cases of joint tuberculosis, and states that tuberculin has been of little or no value in the diagnosis or treatment of these cases and that the X-ray also had been of little value. In some cases where the X-ray indicated apparently only a small focus of infection it was found on operation that the disease was much more extensive and not amenable to operative treatment. In fact, operation except the occasional aspiration of abscesses is very seldom advisable in the treatment of any of these cases. In a series of cases which could be carefully analyzed, the author reports 80 per cent of cures. By cure is meant there was no evidence of any active disease, no apparent deformity, a good functional limb. Many of the remaining 20 per cent died of some other disease than tuberculosis. The author states that he has never seen a bony ankylosis in an uncomplicated tuberculous joint.

GEORGE I. BAUMAN.

Els, H.: The Treatment of Tuberculosis of the Knee-Joint; and Its Results (Über die Behandlung der Tuberkulose des Kniegelenks und ihre Erfolge). *Beitr. z. klin. Chir.*, 1913, lxxxvii, 51.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Els reports 454 cases of tuberculosis of the knee, treated clinically by Garré in Breslau and Bonn, with especial reference to the comparative results from operative and conservative treatment; over two-fifths of the cases occurred during the first ten years of life; in sixty-six cases there was hereditary taint; while 40.4 per cent were of synovial origin. The treatment was not routine, but was individualized, taking into account the age and social position of the patient, as well as the objective findings. Operation was performed only where there were foci in the bone that could be seen in the röntgen picture, where the process was advanced and complicated by abscesses and fistulæ, or had led to severe contractures and subluxations; in all other cases conservative treatment was attempted; rest, injection of iodoform glycerine, and heliotherapy. Bier's hyperæmia is no longer used, and good results were obtained from röntgen treatment in only a few cases.

Of the 133 cases treated conservatively, after subtracting those still under treatment and those who had been dismissed less than a year, reports were obtained from 86, 51.2 per cent of whom showed

good results; 45.3 per cent bad; and there were 16 deaths. Of 317 cases operated upon, arthrectomy was performed in 13 cases. Of the four reported on, two had moderately good results, one was resected later, and one died later. Amputation was performed in 32 cases, 17 of which were reported; ten of them are well, with stumps capable of bearing their weight; four still have fistulæ and pain; and three died of miliary, pulmonary, and kidney tuberculosis.

Resection was performed in 268 cases, 114 of whom were under 15 years of age. The immediate results showed 87.73 per cent recoveries; 5.59 per cent improvements; 0.74 per cent not cured (recurrence); 3.73 per cent amputated afterwards; 2.24 per cent deaths — that is, 93.3 per cent good and 6.7 per cent bad results. Permanent results, over a year after the operation, were reported in 188 cases, 14 of whom died. If we subtract from the remainder, cases which showed a shortening of over 5 cm., there are still 83.6 per cent of excellent results (König 75 per cent). Even in children with severe changes in the bones, abscesses, fistulæ, and poor general condition, conservative resection is indicated.

VORDERBRÜGGE.

Syring: Treatment of Tuberculosis of the Joints of the Foot, and Its Results (Über die Behandlung der Tuberkulose des Fussgelenks und ihre Erfolge). *Beitr. z. klin. Chir.*, 1913, lxxxvii, 88.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author's work is a supplement to Garré's report at the 1913 Congress, and gives a statistical account of Garré's material at Königsberg, Breslau, and Bonn, in the special field of tuberculosis of the foot. His special object is to show the results of treatment. Of the 222 cases, 65 per cent occurred in the first two decades of life, one-fifth showed hereditary taint, and 46 per cent had other tubercular affections. The proportion of osseous to synovial tuberculosis was about two to one. The chances of recovery grew slighter as the number of joints involved increased; with the formation of periarticular abscesses and fistulas, which were observed 103 times; and with disease of the tendon sheaths, which occurred in 76 cases.

Children showed a tendency to contractures which led to club-foot, while adults showed more of a tendency to flat-foot, which caused mistaken diagnoses in 10 per cent of the cases. Mistaken diagnoses may be avoided by repeated röntgen examinations in various positions.

Conservative treatment, repeated injections of iodoform glycerine, and plaster casts, in conjunction with general treatment, brine baths and soft soap inunctions, and heliotherapy, where possible, had to be given up in 114 cases, but where it was carried out it gave good results in 75 per cent of the cases.

The choice of cases is important and only those should be selected in which one, or, at most, two joints are involved, and where chiefly the capsule is affected, without large foci in the bone. The ma-

jority of the cases of foot tuberculosis that came to the clinic were not suited for conservative treatment. Excochleation and wedge resection were indicated in only a few of the cases. Therefore the typical resection was preferred, and was made use of in 45 per cent of all the cases treated, and in 53 per cent of the operative cases.

In tuberculosis of the anterior part of the foot, even when only one bone, the cuboid, was involved, transverse resection was performed with König's bilateral incision, which leaves the least deformity and offers the best chances of removing the diseased focus without opening it. The tendons do not need to be shortened for they adapt themselves to the altered condition. In the treatment of the upper ankle-joint, arthrectomy was never performed, but the cartilage was always removed, frequently with a part of the bone.

Recently Garré has preferred, almost exclusively the total removal of the astragalus, with superficial resection of the os calcis, with König and Bruns' incision. The removal of the astragalus is the only procedure that gives a sufficient view of the field, and it does not give any worse functional results than wedge-shaped resection; moreover, in one-third of the cases the articulation between the astragalus and tibia was also involved. The shortening caused by the removal of the astragalus is compensated for during the years of growth, by placing the os calcis in an oblique position, which the author explains as being analogous to Nikoladoni's treatment of flat-foot by increasing the function of the muscles of the sole, which is accomplished by bringing the points of insertion nearer and by atrophy of the antagonistic peroneal muscles.

In adults, the os calcis is left in position, and it almost always results in flat-foot. In a few cases, on later examination, a functioning new joint was found, but generally a firm ankylosis is the best that can be done, as walking is made easier by increased mobility of Chopart's and Lisfranc's joint. Slight mobility generally causes pain from deformity. Of 75 cases of resection of the articulation between the astragalus and the tibia examined later, 49 showed good results, and some showed remarkable functional capacity. In the first two decades of life the proportion of successful to unsuccessful cases is 75 to 25, in adult life it is 53 to 47. Foot tuberculosis in youth is the chief field for resection. Amputation had to be performed in 45 cases, 30 of which were soon able to return to their work. SIEVERS.

Robinson, W.: Torn Semilunar Cartilages. *Brit. M. J.*, 1914, i, 133. By Surg., Gynec. & Obst.

There can be a tear without displacement, according to the author, but no displacement without a tear, and he thinks that the term "torn" should displace "dislocation" in speaking of this condition, the frequency of which he accounts for on anatomical grounds. The outer convex border of the internal semilunar cartilage is attached to the capsule of the joint rather firmly in the posterior

half but loosely in the anterior half. The quadriceps extensor sends slips down on each side of the patella to be inserted into the capsule of the joint. When a strong contraction of the quadriceps occurs, it pulls on these lateral slips of insertion and in doing so tends to pull the anterior half of the internal semilunar cartilage out in such a position that it can be caught between the condyle of the femur and the head of the tibia.

When the knee is bent and the leg rotated outwards, or the thigh inwards, the capsule being loose, the anterior half of the cartilage is obliquely stretched across the articular surfaces immediately in front of those parts of the internal condyle and the head of the tibia which are in close contact. Should a sudden extension occur, the cartilage is nipped, and as extension continues, the capsule is forcibly pulled outward by the contraction of the quadriceps and, as the cartilage cannot follow, a rent in its substance occurs. As a general rule, the author says that if the femur has been rotated inwards, or the leg outwards, the inner meniscus will almost always be found torn. If the rotation of the femur is outwards, or the leg inwards, one cannot be so certain that it will be the outer meniscus which will be found ruptured.

The treatment, he says, is operation. One point in the technique is that the sutures in the capsule are made interrupted, wide apart, to allow of the escape of synovial fluid and so prevent subsequent distention of the joint—no splint is used. He reports 24 cases: 22 internal semilunar, and 2 external cartilages. M. S. HENDERSON.

FRACTURES AND DISLOCATIONS

Peckham: Mechanical Treatment of Some Fractures. *Am. J. Orth. Surg.*, 1913, xi, 250. By Surg., Gynec. & Obst.

There is now beginning a reaction against the open treatment of fractures which is the outgrowth of many cases of sepsis and some fatalities in plating. Future treatment will be along purely mechanical lines and mechanical ingenuity will be more freely displayed by surgeons.

The author reports ten cases of fracture of the lower end of the humerus and of both bones of the leg, all but one of which were treated without operation. For convenience in applying casts on the leg he uses a small Bradford frame with a windlass by means of which extension is obtained. The röntgen ray should be freely used in case of fracture, not only for diagnostic purposes but after reduction to insure proof of results. A portable apparatus with storage battery is recommended for cases which for any reason cannot be removed to a röntgen laboratory. W. A. CLARK.

Magruder, E. P.: The Treatment of Fractures. *Am. J. Surg.*, 1914, xxviii, 1. By Surg., Gynec. & Obst.

Under the above title Magruder gives the conclusions which he has reached as a result of a large

experience in the treatment of fractures by both methods of treatment. At the outset he states that, in his opinion, the closed fracture in cases in which it can be properly kept as such always unites more quickly than the closed fracture healed by the open method. He cites operative trauma and the application of a foreign body as the chief factors in the production of delayed union. Contrary to the experience of Lane, he holds that steel plates actually retard consolidation, even in cases where there has not been the slightest evidence of infection of the soft parts. Bony union following fracture of the femur will be as far advanced in six or seven weeks, in the absence of foreign bodies, as it would have been in ten weeks had steel plate been used, according to our author, who observes:

1. The ideal treatment of fractures is the closed method when by it reduction can be maintained.

2. Next is the open method of reduction without the introduction of a foreign body when by this method reduction can be maintained.

3. Open method with the use of the least possible amount of foreign material.

Indications for operation in a closed fracture are:

(1) When complete reduction is impossible; (2) interposed soft parts; (3) spinal fractures with separation; (4) when apposition cannot be maintained; (5) multiple fractures; (6) rotation of fragments; (7) injury to blood-vessels and nerves; and (8) marked deformity.

The advantages of the open method are: (1) Better union; (2) relief from pressure on nerves; (3) anatomical reduction; (4) removal of interposed soft parts; and (5) less danger of ankylosis in articular fractures.

Magruder advises the earliest possible operation, with a thorough washing away of blood-clots. He recommends the following treatment of compound fractures:

1. If there is extensive comminution of the bone and irreparable damage to blood-vessels and nerves, immediate amputation is advised.

2. When amputation is not indicated, after the wound is disinfected, the fragments should be replaced and the wound healed as a closed fracture. Anti-tetanic serum should be given if indicated.

The author advocates the use of a "tinned-steel-annealed wire" as the most trustworthy suture material, and further, he condemns the use of plates and clamps because they are "cumbersome, of unnecessary size and weight." ISIDORE COHN.

Lisowskaja, S.: The Treatment of Ununited Fractures and Pseudarthroses with Injections of Periosteum Emulsion (Zur Behandlung nicht konsolidierter Frakturen und Pseudarthrosen mit Injektionen von Periosteumulsion). *Chir. arch. Veliaminova*, 1913, xxix, 792.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

After describing the animal experiments performed by Nakatar, Dilgen, and Sasaki, the author reports 5 cases: 2 uncomplicated fractures of the fe-

mur; 1 fracture of the leg; 2 pseudarthroses of the knee-joint after resection. Flaps of periosteum were taken from the anterior surface of the tibia and cut up into bits, 1 to 1½ mm. in size, which were washed in physiological salt solution and injected between the ends of the bone; afterward the skin was sutured and a plaster cast applied. The author always incises the skin to avoid carrying in skin bacteria. In four cases consolidation followed after several months. In one case of pseudarthrosis of the knee-joint, ossification did not take place as the patient was very cachectic from tuberculosis. Microscopically, during the second operation, suture of the pseudarthrosis, foci of necrotic and granulation tissue could be seen, and also cartilage in the process of formation. HILSE.

Colvin, A. R.: Fractures of the Tibia and Fibula at the Ankle-Joint. *Surg., Gynec. & Obst.*, 1914, xviii, 99.
By Surg., Gynec. & Obst.

Lesions occurring at the lower ends of the tibia and fibula are very varied in character, requiring the radiograph usually for differentiation and a guide to treatment. Pott's original description of the fracture, which bears his name, was that of a fracture of the fibula, above the inferior tibio fibular joint, and a rupture of the internal lateral ligament.

The author's observation and perusal of illustrated literature of this subject convinced him that Pott's fracture, in the strict sense, is a rare injury. In a series of sixty cases, Pott's fracture occurred but once, the remaining fifty-nine being made up of eight different lesions — bimalleolar fractures being the most frequent. Various lesions here are produced by predominating everting or inverting forces. These forces used as corrective measures in either direction may result in a deformity opposite to the one caused by the original injury. Adduction or inversion of the foot is not necessary as a retention dressing, except in Pott's fracture, and, if used in bimalleolar fracture, is very liable to result in deformity.

Pott's fracture must be put up in inversion, to approximate the torn structures at the inner side of the foot during healing.

Young: Recurrent Anterior Dislocation of the Shoulder. *Am. J. Orth. Surg.*, 1913, xi, 243.
By Surg., Gynec. & Obst.

Some of the causes of recurrent anterior dislocation of the shoulder are: (1) A large laceration of the capsule on the anterior side, (2) a lax condition of the capsule proper, (3) fracture of the inner edge of the glenoid cavity, (4) atrophy of the musculature on the affected side, and (5) rupture of the outward rotators of the humerus. The first recurrence may be weeks or months after the primary dislocation and may result from a slight exertion, as merely turning over in bed. Operation of overlapping the capsule or of excision of part of it and suture of the edges is suggested to prevent recurrences.

The author prefers to divide the lower portions of the insertions of the pectoralis major and of the latissimus dorsi muscles, put the arm in extension for two weeks and thus produce a lengthening of these tendons so that the muscles cannot, through contraction of their lower portions, produce the dislocation. In muscular persons it is difficult to divide both tendons through one incision. The incision is made over the space between the deltoid and pectoralis major, exposing the bicipital groove, the cephalic vein is displaced outward, the tendons picked up on a hook and the lower portions divided.

W. A. CLARK.

Thomas, T. T.: Habitual or Recurrent Dislocation of the Shoulder; Eighteen Shoulders Operated on in Sixteen Patients; a New Axillary Operation. *Surg., Gynec. & Obst.*, 1914, xviii, 107. By Surg., Gynec. & Obst.

The reported results of capsulorrhaphy are almost uniformly favorable. In 12 of the 18 shoulders operated on, an incision anterior to the axillary vessels was employed, in 7 there was a posterior axillary incision, one having been operated on by both methods. The anterior axillary operation is preferred to those previously employed, but the posterior axillary operation to the anterior, because it is safer, more easily and quickly performed, no muscles are divided, and in 3 of the last 4 cases no ligatures were employed. The patients, usually, left the hospital in a week, and several returned to work in three weeks or less.

In 5 of the 18 cases, dislocation occurred after operation, in 1 after two operations. This case was probably incurable by capsulorrhaphy, because of a large defect in the humeral head and because the patient had powerful epileptic convulsions. In another epileptic, the anterior half of the glenoid cavity had been worn away, but permission had not been obtained to do more than a capsulorrhaphy.

In a second operation the glenoid cup was reshaped and the capsule contracted (Hildebrand), and no further dislocations have occurred after two and one-half years. The first operation was known at the time to be inefficient. In the third of these 5 cases, during heavy-weight wrestling, which had been indulged in for two years, an opponent fell on the arm of the side operated on while it was in abduction, and dislocated the shoulder, three years after operation. He had had no further dislocations, a year later.

In the fourth case, in the first nine months after operation — 4 years ago — there occurred from severe violence on two occasions, a subluxation with immediate spontaneous reduction. The patient has used the arm vigorously since in swimming, tennis, and baseball playing, but has had no further dislocations.

In the fifth case, a complete dislocation occurred from severe violence, seven months after operation, but in six months' vigorous use of the arm since, he has had no further dislocations.

All the patients have been advised to use the arm after operation as freely as the other. Of the 13 cases in which no dislocation has occurred since operation, some are athletes and 3 are epileptics, one of the latter having had more than 68 convulsions since the operation.

A dislocation after operation necessitates a new laceration of the capsule, the cicatricial contraction of which prevents a second recurrence after operation, in most cases. In one case, there was no dislocation, but a year and a half after operation — more than four years ago — when there was nearly full motion and power of the arm, there occurred a tear fracture of the glenoid margin from vigorous boxing, a sinus developed, and finally the head of the humerus was excised, which was the operation of choice before capsulorrhaphy.

Of the 18 operations, therefore, it may be said that 16 were successful, 1 partially successful, and 1 a failure, but even in the latter case the patient is no worse than he would have been without the operation.

Sherman, H. M.: Congenital Dislocation of the Hip; a Rational Method of Treatment. *Surg., Gynec. & Obst.*, 1914, xviii, 62.

By Surg., Gynec. & Obst.

The author describes briefly the common major deformities of the joint components found in the condition complex of congenital dislocation. These are incompetencies in all the anatomical parts, which interfere with or wholly prevent the fitting of the bones to each other after a reposition. Among these, antetorsion of the upper end of the femur is emphasized, by which is meant a twisting forward of the neck and head and backward of the trochanter, so that when the toes point forward the neck and head also point forward. This antetorsion can be recognized by taking two radiograms, one with the toes pointing forward, when the head and neck show foreshortened, and the other with the leg rotated in, so that the toes point to the opposite foot, when the head and neck show in profile, and their ability to enter and remain in proper relation to the acetabulum can be estimated. The persistence of this antetorsion untreated is the greatest cause of relaxation. It is pointed out that the capsule and its constriction at the upper part of the acetabulum is the major obstacle to reposition, and that this constriction is always present except in a very small number of the cases.

The method of treatment contemplates a reduction of the dislocation by an incision; this incision lies between the long head of the rectus femoris and the tensor vagina femoris, and so avoids cutting any cutaneous or muscular nerves. It enters the capsule just beneath these muscles, and the gloved finger can then enter the capsule also. By flexing the joint the capsule is relaxed, and the finger can direct a long, straight, probe-pointed knife to and through the constriction. The capsule must be cut in a direction downwards enough to open a space through

which the femoral head can pass. Reduction is then usually easy.

The limb must then be extended and abducted at the hip, and also rotated in, especially if the antetorsion is present.

In closing the wound, the capsule is not sutured. The child is put in a double plaster of Paris spica, and kept there for from four to six weeks. At the end of that time the splint is removed, and if there is an antetorsion of the shaft a nail is driven into the trochanter, and then subcutaneous osteotomy is done below the nail, in the upper part of the shaft. With the nail the smaller fragment is held in proper correlation to the acetabulum, and the larger fragment is rotated out, so that the toes again point forward. The patient is once more put into a plaster of Paris spica, the nail remains in place from four to six weeks, and is then removed. The long spica is replaced by a shorter one, walking beginning about three months after the osteotomy, with the leg still in the splint.

With this technique of reduction through an incision, which really reduces, and osteotomy when it is necessary to fit the component parts of the joint to each other, the patients have a full 100 per cent of their chances for a practical joint. It is not possible to recreate bony deficiencies, nor to perfectly fit together wholly mismatched parts, but with a practical acetabulum and a practical head and neck the method should give a practically normal joint. A joint is a mechanical contrivance, and the test of its mechanical competence is its functional competence. A joint which has a functional competence equal to that of a normal joint is itself a normal joint. In many instances the radiogram may show variations in shape, size, and other details from the generally accepted form, but if the function is equal to that of a normal joint it is claimed that it is a normal joint. This treatment has given 70.3 per cent of functionally normal joints.

SURGERY OF THE BONES, JOINTS, ETC.

Van Duyn, E. S.: Deductions from Our Experience at the Hospital of the Good Shepherd in the Open Treatment of Fractures. *Am. J. Surg.*, 1914, xxviii, 8. By Surg., Gynec. & Obst.

The author believes that asepsis is the keynote to success and he emphasizes particularly the necessity of trained assistants. Attention is directed to the great importance of interposed soft parts as a cause of inability to reduce fracture displacements by the closed method. Plates have been discarded by the author because in his experience 75 per cent have subsequently had to be removed.

The author summarizes as follows: We hold that the open treatment of fractures is more scientific and gives better results than the older method in those cases where complete reduction cannot be immediately accomplished and maintained; that the dangers of the open method of treatment lie

only in faulty technique; that excepting where it is necessary to bridge a gap, foreign material, other than sutures, should not be introduced; that when such foreign material is necessary, bone from the patient himself is the best; that all cases should be examined at regular intervals with the X-ray to determine the amount and extent of callus formation, and when failure in such formation is manifest in spite of early manipulations, strain, pressure, and massage, known therapeutic and mechanical means to induce local hyperæmia and promote bony deposits, should be employed.

ISIDORE COHN.

Moorhead, J. J.: Transfixion Treatment of the Shaft of the Femur; Dislocation of the Elbow with Compound Fracture of the Forearm. *Med. Fortnightly*, 1914, xlv, 33.

By Surg., Gynec. & Obst.

A case of femoral neck fracture in a woman of 63 was treated by Whitman's abduction plaster spica method with a shortening of one inch, a slight limp, and free motion in joint as the result. The author also reports seven cases of femoral shaft fractures which were treated by putting through the femur, just above the condyles, a steel drill long enough to protrude on each side of the thigh.

The method of procedure consisted of: Anæsthesia; one-half inch incision; a hole drilled by a Yankee drill; a steel drill thrust through to the skin on the opposite side, then pushed through the skin, and a cord attached to each end from which is obtained the hold for traction which is applied in much the same manner as ordinarily. The patient is put to bed on an inclined plane, and a weight of eight pounds is attached, the weight being increased gradually up to fifteen pounds.

The author claims that with this method there is much less danger of infection than in plating, and it takes few instruments, thus permitting performance in the home. He admits that there is less control of lateral deformity, but thinks this is more than compensated for in the less frequent shortening from overlapping. The weight is kept on for eight weeks. The steel drill will then be loose and can be withdrawn easily. The case of elbow dislocation was reduced under anæsthetic, but on attempting replacement of the accompanying forearm fracture he met with failure. On the eighth day the radius was plated and by a small incision over the ulna it was easily sprung into place.

C. A. STONE.

Spiegel, N.: Accidents in Nail Extension (Zufälle bei Nagelexension). *Dissertation*, Berlin, 1913.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author discusses, with interesting statistics, the following subjects: The extension method, Bardenheuer's adhesive plaster extension, nail-extension, over-correction, pain and painlessness, swelling of the joints, genu valgum, ankylosis, breaking off of the nail, loosening of the nail, cutting through of the bone, incorrect application of the nail, necrosis of the skin and bedsores, danger

of infection, long duration of nail extension, formation of fistula, too long time required for recovery, rises of temperature. He discusses 18 of 20 cases, in which Steinmann's method of nail extension was used. Of the 18 cases, 14 were fractures of the lower extremity; in 4 there was congenital dislocation of the hip; 11 of them were male, 7 female; the ages ranged from 9 to 63 years.

In one case, a man of 45 years, which is described in detail, the nail extension treatment of a fracture of the upper femur resulted in several accidents: Diastasis, severe pain, later dislocation, genu valgum position, breaking off of the nail. Because of the possibility of over-correction the nail extension treatment needs to be very carefully watched, which is only possible in hospitals. The practitioner may meet with many unpleasant surprises on this account, such as displacement of the fragments, œdema, disturbances of the circulation, and atrophy. The patients react very differently as regards pain; however, very severe pain is unusual; swelling of the joint during and after nail extension is not unusual. From the fact that knock-knee resulted in 2 cases, the conclusion is reached that the traction in many cases may have a harmful effect on the ligaments of the joints.

Ankylosis also occurs rather frequently. In the author's cases this lasted a considerable time, and was apparent on the later examinations. In a considerable number of fractures of the lower extremity, movements of the joints, especially the knee-joint, cannot be carried out during traction, or if so, only with the greatest difficulty. In four of the author's cases there was stiffness of the joints. Steinmann's treatment is not superior to adhesive plaster extension on this point: in the former, ankylosis takes place in the extended position, in the latter in the flexed position. But it must be acknowledged that the ankyloses following nail extension are more amenable to mechanotherapy than those following adhesive plaster extension.

There is frequently ankylosis of the foot-joint also, for in fractures of the lower femur the calcaneus is generally used as the point of insertion for the nail. The author has had the nail break off three times, and, in a fourth case, it could be seen from the röntgen picture that if traction had been continued any longer it would have broken off.

Among some of the most important disadvantages of the various forms of apparatus the author mentions: Loosening and turning of the nail, cutting of the bone by the nail, displacement, breaking of the nail, bedsores, and necrosis. There is no doubt that the nail fistulæ observed so frequently in nail extension—5 times in 8 cases—are due chiefly to the moving of the nail in its canal. The author has constructed an apparatus by means of which these technical difficulties and their clinical consequences are avoided. A further technical difficulty lies in the fact that the nail is sometimes not applied properly, with the result that the bone may be cut by the nail, and other unpleasant results may

follow—pressure from the nail may injure the skin, frequently resulting in necrosis. In the author's 18 cases there were 8 cases of bedsores. The ulcer offers great danger of infection; the long duration of the traction is also a further disadvantage—in the author's cases the average was 19 days, the time ranging from 8 to 31 days.

So far, there is no known way of avoiding the danger of infection in nail extension. Fistulæ are frequent, occurring in 5 out of 18 cases. In a 9-year-old girl, nail extension was undertaken for a viciously healed fracture of the upper femur—there was a fistula at the site of the nail for more than 2 years. The average duration of the hospital treatment was 77 days, ranging from 23 to 146. Most of the cases were severe fractures. In 8 cases there was a rise in temperature. FRITZ LOEB.

Nové-Josserand, Rendu, A., and Michel, P.: Four Cases of Codivilla's Nail Extension in the Treatment of Fracture of the Femur in Children (De l'extension par le "clou de Codivilla" dans les fractures du fémur chez l'enfant, quatre observations). *Rev. d'orthop.*, 1913, v, 487.

By Journal de Chirurgie.

The authors report very satisfactory functional results obtained by extension with Codivilla's nail in four cases of fracture of the femur with great displacement of the fragments. They admit that traction on the soft parts properly applied and carefully watched, may perhaps give as good results, but maintain that traction applied directly to the bone gives more exact results than that applied to the soft parts, because all the force used is applied directly to the reduction of the fracture. By this method much heavier weights can be used than in simple traction, and the authors have used 44 kg. without any serious results, though generally 7 to 8 kg. is enough.

In two children, aged 6, the nail cut the calcaneus, but reduction of the fracture was secured. It seems to us, however, that it would be preferable to avoid injuring the bone by using lighter weights. The perforation of the bone by the nail does not have any immediate or remote harmful effects; the method is simple and does not demand a great degree of attention.

The authors have modified Codivilla's procedure. They make use of his method of traction by a nail driven into the calcaneus. This allows continuous extension over a pulley of 8 kg. of weight or more, but they have provided for counterextension by a sort of plaster breeches, making use of the pelvis and sound thigh, as in an ambulatory apparatus for coxalgia. When the plaster is dry the child is put in a bed furnished with a rigid trough as for coxalgia. The thigh covered by the plaster is laid parallel to the edges of the trough so that the line of the iliac spines is perpendicular to the axis of the body; then counterextension is made by fixing two straps to the waist of the cast and tying them to the head of the bed. In this way, as the counterextension is made

through the intermediary of the plaster apparatus, the force applied is distributed over all the points covered by the latter, so that it is much more efficacious and much better supported.

The authors conclude that Codivilla's method, modified in this way, is excellent for children and is not at all dangerous or serious. They emphasize the dangers for children and adolescents who have not yet finished their growth, of Steinmann's method, which drives the nail into the peripheral segment of the epiphysis. The articular cartilage is thus injured and irreparable injury may be done to the future growth of the bone. ALBERT MOUCHET.

Brickner, W. M.: Metal Bone-Plating, a Factor in Non-Union; Autoplastic Bone-Grafting to Excite Osteogenesis in Non-Union of Fractures. *Am. J. Surg.*, 1914, xxviii, 16.

By Surg., Gynec. & Obst.

Brickner cites two cases of non-union following the use of bone-plates in fractures of the femur. He removed the plates and introduced an osteoperiosteal graft from the tibia over the site from which the plates had been removed. The graft was held in place by suturing over it periosteum and muscle. Firm union resulted in both cases. His conclusions are:

1. A metal plate screwed to a fractured bone can of itself cause delayed union and non-union.
2. The use of metal plate and screws is not advised in any open operation in which simple reduction or reduction of the application of an autoplastic fresh bone-splint-graft would be sufficient.
3. Neither a $3\frac{3}{8}$ metal plate nor an additional plaster cast can be depended on to maintain the alignment of a fractured femur in a muscular thigh.
4. Study of the radiographs shows a gradual fusion of the bone-graft with the femur and affords no indication of rarefaction or absorption of the graft itself.

ISIDORE COHN.

Albee, F. H.: The Inlay Bone-Graft as a Treatment of Ununited Fractures; Report of Fifteen Successful Cases. *Am. J. Surg.*, 1914, xxviii, 20.

By Surg., Gynec. & Obst.

After a study of 205 bone transplants of varying character, the author concludes that Lane plates and other internal metal splints, when applied to ununited fractures of long standing, are a hindrance rather than an advantage in securing bony union. Albee believes that the indications for treatment in fresh fractures and ununited fractures are entirely different. In fresh fractures temporary fixation only is necessary to insure union, as the osteogenetic function is active, and in the presence of accurate apposition union rapidly occurs. The Lane plate in suitable cases fulfills all requirements.

In ununited fractures there is diminution of the osteogenetic activity. Here the indications are fixation and stimulation of osteogenesis on the part of the fragments and an osteogenetic scaffold. The bone-graft fulfills these requirements, and further,

the bone graft not only stimulates callus but grows bone on its own account; the plate furnishes but one of these requirements, namely, fixation.

In twelve cases Albee applied the following technique with 100 per cent good results:

1. The fractured area is exposed.
2. The edges of the bone are freshened with chisel or saw.
3. The sclerosed plug is removed from the medullary canal.
4. If there is overriding, traction — pulley and weights — is used.
5. The periosteum is divided over the bone to be removed in making the gutter for insert.
6. Two parallel saw cuts three-eighths of an inch apart are made longitudinally of the fragment ends completely through the cortex. The cuts should be two and one-half to three inches in length in each fragment and the saw should be constantly bathed in a saline solution.
7. Holes should be drilled in the cortex on either side of the gutter.
8. The opposite tibia is exposed.
9. With the twin saw adjusted as before, bone cuts are made to the marrow along the antero-internal tibial aspect.
10. With a narrow osteotome or small motor saw, the graft is dislodged.
11. Kangaroo tendon is placed in the drill holes previously made, elevated from the bottom of the gutter and the graft inserted under the tendon, which is now pulled tight.

The bone-graft, being living tissue, has certain germ-resisting properties; consequently, it immediately becomes adherent and fixed to the contacting tissues; it not only stimulates the bone with which it is contacted to increased osteogenesis but it proliferates bone on its own initiative.

ISIDORE COHN.

Osgood: A Method of Osteotomy of the Lower End of the Femur, in Cases of Permanent Flexion of the Knee-Joint. *Am. J. Orth. Surg.*, 1913, xi, 336.

By Surg., Gynec. & Obst.

For old supracondylar fractures healed with the knee in permanent flexion, the author has devised an osteotomy which permits complete extension of the knee. It consists of the removal of a wedge from the anterior aspect of the femur of such shape that a lip is left on the lower fragment which by locking on the upper fragment prevents backward displacement. He reports three cases so treated in which the results were excellent. W. A. CLARK.

McWilliams, C. A.: The Periosteum in Bone Transplantations: Is Contact with Living Bone Necessary for the Life of Grafts, and Will Transplanted Periosteum Produce New Bone? *J. Am. M. Ass.*, 1914, lxii, 346.

By Surg., Gynec. & Obst.

The assertion made by Murphy that contact with living bone is absolutely necessary for the success of

bone grafts, and that the periosteum is of secondary importance, is challenged by the author, and ten experiments on dogs are cited to substantiate his views. The periosteum is of importance as it affects the blood supply and not wholly because of its osteogenetic function. Forty-eight per cent of the grafts without periosteum succeeded probably because the blood supply was sufficient to keep them alive. Good röntgenograms illustrate the report of his experiments, all of which tend to show that contact with living bone is unnecessary to the life of the graft, that grafts with periosteum practically always live, that grafts without periosteum are uncertain, that periosteum alone transplanted into soft tissue may produce new bone, and that blood supply is the essential factor in determining the fate of the grafts.

W. A. CLARK.

Perimoff, W. A.: A Case of Fat Transplantation in a Bone Cavity (Ein Fall von Fetttransplantation in eine Knochenhöhle). *Med. Obozr.*, 1913, lxxix, 763. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Fat transplantation was proposed by Neuber 20 years ago, but was first successfully used by Chaput to fill a bone cavity in 1904; in Germany, Makkas reported the first three cases in 1911; in Russia, Hesse, Klopfer, and Lawrowa performed the first operations in 1912. The author reports a case of his own in which, 17 days after the operation, the skin wound had to be trimmed, and advantage was taken of this opportunity to look at the transplanted fat. It did not seem to have changed, and when removed the superficial layers did not bleed. Probably this indicates that the fat had lain in the bone cavity as a foreign body. The patient recovered completely.

STROMBERG.

Rehn, E.: Replacement of Tendons (Klinischer Beitrag zur freien Sehnenverpflanzung). *Arch. f. klin. Chir.*, 1913, clii, 15.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Homoplastic transplantation of tendons has not yielded the clinical results that was expected from the experiments on animals. The transplants generally take and there is only transitory necrosis, but the permanent results leave much to be desired; therefore the transplantation should be autoplasmic whenever possible. The material is obtained from the tendon of the palmaris longus, splitting the extensor tendons, or by taking broad bands from the Achilles and rectus femoris tendons. The tendon must be transplanted into loose tissue well provided with blood, which insures prompt nutrition. For this reason cutaneous scars must be extirpated and the loss replaced by skin flaps with pedicles. The subcutaneous tissue should be split into layers to receive the transplanted tendon.

The regulation of exercise is important for the ultimate result; for if it is undertaken too early, adhesions may be formed with the surrounding tissues which will interfere with functional activity; the adhesions must then be loosened, and recurrence

prevented, by the interposition of fatty tissue. If the after-treatment is too energetic stretching may occur at the point of union of the stump of the tendon and the transplant; this will have to be overcome by an operation to shorten the tendon again. Long continued after-treatment and careful surveillance of the patient is indispensable. Ten illustrated case histories show the excellent results obtained by Rehn.

Three times defects in the extensor tendons of the fingers due to trauma were repaired, four times on the flexors of the fingers and once on the tibialis anticus. Once the tendon of the extensor hallucis longus in a case of paralytic club-foot, was replaced by a tendon of the palmaris longus. The author has yet under treatment a case in which the tendon of the flexor profundus of the right index finger, destroyed by a phlegmon of the tendon sheath, was replaced by a piece, 8 cm. long, from the tendon of the palmaris longus. In this case he had to shorten the tendon afterwards as a result of stretching.

WORTMANN.

Norton, W. A.: An Improved Method of Hæmostasis in Shoulder and Hip-Joint Amputations. *Surg., Gynec. & Obst.*, 1914, xviii, 103.

By Surg., Gynec. & Obst.

Norton describes a method for controlling hæmorrhage in shoulder and hip-joint amputation.

A four-inch bandage and an Esmarch rubber tourniquet is all that is needed. The bandage, made into a 3 or 4-ply strip, is laid upon the chest extending over the shoulder, and a similar strip is held over the scapula. The Esmarch is applied over these strips, and pinned securely with safety pins. The strips are folded back and handed to a nurse, or tied under the opposite arm.

For hip-joint amputations an anterior strip is placed so that the outer border of bandage touches the anterior superior spine of ilium, and the posterior strip is placed so that the inner border of bandage touches the tuberosity of the ischium; the Esmarch is then carefully applied over these strips and pinned securely to them. The bandage pulleys are folded upward, and pull is exerted so as to keep the Esmarch snug in the crotch and in the groove below the anterior superior spine of ilium. The pulleys are now passed over the shoulder of the opposite side and handed to an assistant, or tied securely.

The author advocates this method for amputation and for removal of neoplasms about the shoulder and hip, and claims for it the following advantages: (1) Its simplicity; (2) it does not impair already lacerated tissues, as many of these cases are traumatic and the surgeon is often taxed to find tissue for a flap; (3) perfect control over bleeding areas by pulling above or below, as occasion demands; (4) fresh fields are not opened up for infection, as is necessarily the case when Wyeth's needles are introduced; (5) the time of operation is shortened, therefore the shock is diminished.

ORTHOPEDICS IN GENERAL

Cantas, M.: Pathogenesis of Madelung's Deformity, or Radius Curvus (Contribution à l'étude de la pathogénie de la déformation de Madelung on radius curvus). *Lyon chir.*, 1913, x, 434.
By Journal de Chirurgie.

A girl of sixteen with undeniable signs of tuberculosis, such as repeated attacks of bronchitis, harsh breath sounds at the left apex, and old inflammations of the cervical glands, consulted Cantas for a deformity of the left wrist that appeared after obscure inflammatory symptoms, such as swelling and redness of the skin, pain, and slight fever.

The chief feature of this deformity, which had prevailed for six months, was a backward dislocation of the head of the ulna, which formed a very marked projection on the dorsal surface of the wrist. The ulna had lost its contact with the lower end of the radius and with the carpus and the whole hand was deviated outwards. Palpation and radiography also showed decided deformity of the radius; the lower part of the diaphysis of this bone, 4 or 5 cm. from the articular cartilage, seemed to be enlarged, twisted, and apparently shoved down. This jamming down was more marked on the external border, where the diaphysis seemed to be folded on itself, like an accordion. This resulted in a change in orientation of the articular surface of the wrist, which looked downward and almost directly outward, but the articulation of the first row of carpals was almost normal. Only the internal third of the articular cartilage of the radius was visible, and there was no curving forward of the lower epiphysis of the radius, which is mentioned in most of the cases of Madelung's disease. By comparative measurements of the two forearms it was found that the ulnas of the two sides were of the same length, but the radius of the diseased side was 2 cm. shorter than that of the well side. There was not much functional disturbance; there was, however, a little difficulty and pain on forced movements of flexion and extension, and the patient tired easily.

To remedy this deformity and re-establish equality in the length of the two bones, Cantas resected 1.5 cm. of the diaphysis of the ulna 4 cm. above the styloid process; then he straightened the radius by manual fracture. The ulna was sutured and immobilized in a plaster cast for 30 days, and the functional result was perfect. The radiocarpal articular surface resumed its normal position, but the ulna still failed to come into contact with the carpus and continued to project markedly at the internal border of the wrist. Cantas attributes this case to inflammatory tuberculosis, following the theory that Poncet and Leriche have applied to other cases of radius curvus. The bony lesions pass through two successive stages, that of osteomalacia and then of condensing osteitis.

Cantas' work on the history and pathogenesis of this affection is conscientious, but it does not give

any new information, and there is a certain confusion in it. In fact he regards radius curvus and Madelung's subluxation as the same thing, while to us it seems indispensable, if confusion is to be avoided, to separate the two types, which have distinct anatomical pictures. He thinks too, that the theory of rickets best explains the pathogenesis of the disease, and says that rickets may be regarded as the consequence of a general intoxication of greater or less duration, this intoxication being due to various causes, such as tuberculosis, syphilis, gastro-intestinal disturbances, alcohol, etc. These different origins would have to be separated to attain any degree of clearness.

CH. LENORMANT.

Lovett, R. W.: Principles of the Treatment of Infantile Paralysis. *J. Am. M. Ass.*, 1914, lxii, 251.
By Surg., Gynec. & Obst.

The early diagnosis of infantile paralysis is probably not of much moment to the patient because even if the diagnosis is made early it is doubtful if anything can be done to influence greatly the course of the disease.

Since the pathology of the affection is essentially a hemorrhagic myelitis with a widely distributed accompanying meningitis, the acute attack and the days following it demand general quiet, freedom from excitement and activity for at least three weeks, or until all tenderness has disappeared.

Hexamethylenamine has been used in the acute stage and occasionally cases occur which suggest its use; but no two cases are alike, and the outcome of the case is not wholly determined by the treatment received. The treatment for the tender convalescent phase is to let the patient alone except for the prevention of contraction of the Achilles tendon, which may become troublesome in the first two or three weeks.

With the disappearance of the tenderness the time for active treatment has begun. In the severer cases, however, active treatment should not be begun earlier than four weeks after the onset even if the tenderness has disappeared. The therapeutic measures at our disposal are massage, electricity, and muscle training. Massage improves the local and general circulation, facilitates the flow of lymph, and retards muscular deterioration. The value of electricity has been overrated. Muscle training is the most useful of the three therapeutic measures mentioned.

Unless the destruction of the cord has been very extensive it is very likely that some of the motor centers in any one region will have escaped destruction, and it may be possible to establish new connections around the destroyed centers. In this way it may be possible by a modified route to send a motor impulse from brain to muscle. The object of muscle training is to establish these modified routes and develop them. During muscle training braces and apparatus should be applied, if necessary, to prevent malposition and deformity.

Operative treatment is undertaken: (1) To correct fixed deformities; (2) to improve muscular function; (3) to secure stability of useless joints.

1. These deformities are usually easily remedied by stretching and cutting.

2. The improvement of muscular function is accomplished by tendon transplantation into bone or periosteum and by silk elongation of tendons. These operations should not be performed under two years after the acute attack.

3. Arthrodesis is sometimes done in adults and children over twelve years of age; but for the ankle silk-ligament suspension is to be preferred. And for the knee, most patients prefer a brace which can be unlocked for bending or sitting down.

R. O. RITTER.

Blanchard: Neglected Infantile Paralysis. *Am. J. Orth. Surg.*, 1913, xi, 262.

By Surg., Gynec. & Obst.

In Blanchard's opinion, the hexamethylenamine treatment of poliomyelitis is of no proven value and the use of electricity and massage is a waste of time. He believes the cases should first and last be in the hands of the orthopedic surgeon to prevent deformities from paralysis and contracture. Transplantation of tendons about the knee, such as hamstrings to quadriceps, are usually failures, although practiced by Lange. Lorenz treats quadriceps paralysis by supracondylar osteotomy; producing a back-lock to the knee and enabling the leg to hold the body weight. Jones of Liverpool does a skin shortening operation on the convex side of the deformity, removing an area of skin and suturing the edges in the proper line to produce tension in the required direction; this tension, however, becomes inefficient after a time because of stretching of the skin. The silk ligament attached to bone at both ends is satisfactory. Discussion of this paper brings out the use by Gallie of Toronto of the tendon of the paralyzed muscle instead of silk as a guy rope. Nerve anastomosis is suggested as the ideal operation for restoring muscular equilibrium but it is still in an experimental stage.

W. A. CLARK.

Stoffel, A.: Treatment of Spastic Paralysis (Zur Behandlung der spastischen Lähmungen). *Verhandl. d. deutsche orthop. Gesellsch.*, 1913, iii, 337.
By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author first discusses the origin of spastic paralysis and gives as his own opinion that the pathological condition of the muscle is characterized by two clinical pictures, viz.: (1) The muscle shows a greater or less degree of paresis; (2) the tonus of the muscle is imperfectly regulated. These two factors may be differently proportioned in different cases, and frequently paresis is the least important one. From his experience the author distinguishes a primary and a secondary condition of the muscle; in the primary ones the muscles are more or less paretic and their tonus imperfectly regulated, be-

cause of injury to the brain; the secondary condition is brought about by the fact that external conditions cause the muscle so injured to be kept in a certain position for a long time, so that the points of insertion of certain muscles are brought closer together and become hypertonic, while their antagonists are lengthened and become hypotonic — contracture results.

Stoffel gives numerous cases in his practice, as well as Munk's experiments on monkeys, to support the above view. Treatment, therefore, should seek to prevent the secondary condition, or, if it has already arisen, to transform it into the first. Prophylaxis can be accomplished by changing the position of the limb several times a day and by passive and, later, active movements. If the secondary condition has already begun it can be overcome in mild cases by splints, apparatus, etc. in other cases operative treatment will be necessary. He discusses the aim of operative procedures on the limbs in spastic paralysis, which is chiefly to overcome the hypertonicity of the contracted muscles, but he rejects tenotomy, shortening the antagonists of the contracted muscles, tendon transplantation to the antagonistic muscles, and nerve transplantation. He recommends his nerve operation as the only logical procedure. A partial elimination of the motor nerve paths causes an immediate disappearance of the hypertonus and allows correction of the deformity. The operation only furnishes a basis for the very important after-treatment. CREITE.

Davis, G. G.: Treatment of Poliomyelitis by Operative Measures. *N. Y. M. J.*, 1914, xcix, 4.
By Surg., Gynec. & Obst.

Davis comments on the rapid rise of orthopedic surgery as a distinct specialty, and lays emphasis on the marked progress shown in the treatment of poliomyelitis. A few years ago treatment consisted practically of electricity, massage, and braces, but in recent years operative surgery has opened up a new field of aid for these paralytics. Operations at present are resorted to as a late procedure and only when further improvement or restoration of muscle power is not to be expected. When the surgeons become more experienced, operative procedures will, undoubtedly, be resorted to earlier than is now considered advisable. In many cases the patient must either look forward to wearing braces indefinitely, or else the limb must be so rearranged anatomically that it can fulfill its purpose without apparatus.

Remodeling is done by operations on the bones and joints to restrict their movements, or on the tendons and muscles to restore the balance of the affected parts. Each case offers a problem in itself. As an example of the benefits of operation, Davis presents the case of a boy 13 years old, who was paralyzed in the lower trunk and left lower extremity. At the age of one year the back was partially paralyzed; the leg and foot were flail-like with no power in the muscles except the biceps and

one or two of the foot muscles; there was extreme outward rotation of the foot, and later knock-knee developed. For seven years, braces for the back and leg were worn, but as the boy was exceedingly active the braces were continually being bent or broken and were in constant need of repair.

In order to do away with the continual expense and annoyance of "brace wearing," operative procedures were resorted to. Knock-knee was first corrected by osteotomy of the femur. Three months later fixation of the ankle-joint by arthrodesis was performed; at the same time the biceps tendon was transplanted to the patellar tendon to get extension of the knee, and the anterior part of the fascia lata was sutured to the great trochanter to insure internal rotation of the foot. Braces were worn until the operative wounds were healed, and then they were discarded. At the present time the boy walks well with no external appliance, the foot is held in the normal position, and the course of treatment is ended instead of being indefinitely carried on.

DE F. P. WILLARD.

Marshall, H. W.: Old and Recent Ideas Concerning Treatment of Flat-Foot. *Boston M. & S. J.*, 1914, clxx, 4.

By Surg., Gynec. & Obst.

The author calls attention to the vast number of people wearing shoes of orthopedic design, and plates, and says that in spite of precise knowledge of the anatomy and pathology of flat-foot which has accumulated, the fact remains that a considerable number of persons are made worse instead of better, by wearing shoes of orthopedic shapes, others are made worse by shoes with flexible shanks, many are not improved by arch supports and that some continue to have weak-feet after trying all methods.

The first important reason, in the author's opinion, for failure is due the fact that wearing of orthopedic shoes and plates is due to whims of customers, relying upon experiences of their friends and the persuasion of shoe salesmen; and, to the failure of physicians to understand the precise needs of each patient.

He states that the anatomical dissection demonstrates that feet subjected to tight shoes are changed structurally in bones and ligaments and it is foolish to expect to put deformed feet in orthopedic shoes, as normal shape can be restored only very gradually.

In discussing arch supports he points out that in acute foot strain, frequently additional pressure to the arches cannot be endured and that often the wearing of flexible shoes and the abolishment of artificial supports, give good results.

He brings forth his postulate that there is a need for a better understanding of physiological considerations more than anatomical or pathological ones, in the final solutions of the treatment; that although structural defects are the cause of present and future functional abnormalities, yet simultaneously they also represent results of past physiological defects or primary congenital peculiarities.

The normal condition of feet depends on the following combination of elements:

1. The amount of weight borne and the length of time it is endured.

2. The degree of healthy vitality existing at the particular time in ligaments and muscles supporting the arches that is represented by their strength.

3. Favorable and unfavorable qualities of blood circulating through the feet at the given time.

These considerations in conjunction with the anatomical and pathological findings make the only working formula for each case.

The proper view to take toward various orthopedic devices and shoes is one of recognition that most of these have merits, and that they indicate the number of stages through which any single case may pass.

He emphasizes the fact that health always represents a balanced state between various physiological elements, and treatments are divided always toward restoring usual ratios between these several forces. In health, if a person becomes heavier, then compensatory changes in the strength of muscles and ligaments are seen so that normal balances between the pressure upon the arches and muscle strength are not upset.

In weakened feet, pressure and strain are diminished by supporting arches, by reducing mechanical strain, by rest, or by continuing supports with partial rest.

Vascular elements in development of foot strain are frequently poorly understood, yet its important influence is convincingly indicated by the frequency with which debilitated conditions indicate development of foot sympathies.

The author discusses intestinal putrefaction, and its effects on the condition of the blood with resultant anæmias and articular pains. He thinks that if proportions of substances in the circulation remain favorable, the individual thrives; but *vice versa*, if there is a deterioration, muscles and ligaments as well as organs suffer. He makes a plea for a more thorough understanding of the changes in the blood and the biological needs of living tissues.

Many cases of strain, in Marshall's opinion, may be cured by a general tonic treatment, but that some cases of flat-foot must be recognized as beyond control when chronic, progressive diseases of the gastro-enteric tract, kidneys, and other organs prevent correction of vascular conditions.

The author sums up by saying that too much cannot be known about anatomy and pathology, yet it should be remembered that of themselves they offer only incomplete suggestions as to proper treatment, and equally important physiological and biological needs must be understood and familiarized.

J. O. WALLACE.

McIlhenny, P. A.: Flat-Feet, and What They Lead to. *N. Orl. M. & S. J.*, 1914, lxvi, 511.

By Surg., Gynec. & Obst.

The author describes the two main arches and taking depression of the longitudinal arch. He

states that in order to get rid of painful symptoms the foot is abducted beyond the weight-bearing angle until the whole leg is rotated outward, this in time causing a stretching of the capsules and ligaments on the inside of the knee, a position of flexion, and genu valgum.

As a result, the head of the femur is rotated forward, producing a stretching of the anterior ligaments and a consequent laxity of the posterior portion of the capsule and the iliofemoral ligaments; this in time allows the pelvis to sag backwards, carrying with it the sacrum and lumbar spine, producing pressure on the anterior portions of the vertebræ, a pinching of the vertebral discs, and a stretching of the posterior ligaments of the lumbar and lumbosacral spine, producing lumbar pain simulating sciatica.

To compensate lumbar-lordosis, there is a forward bending of the dorsal spine with a depression of the sternum and chest wall. Going hand in hand from thoracic to abdominal breathing, he shows the resultant enteroptosis. He considers the most prominent symptoms to be chronic backache, chronic constipation, nervous irritability, and sometimes digestive disturbances. He reports five cases in which the patients, although they had had deformities in their feet, presented themselves for treatment for discomforts above described.

J. O. WALLACE.

Harris, J. R.: Flat-Feet; the Etiological Relation of Posture and Gait Thereto. *Mil. Surgeon*, 1914, xxxiv, 1. By Surg., Gynec. & Obst.

The author declares that in the army, efficiency means mobility, and mobility spells "good feet." He states that from several years' observation he is forced to conclude that a faulty method of standing and walking is, if not the prime cause, at least a large factor in an etiological circle.

He divides standing into two classes:

1. The pigeon-toe, or position of strength and readiness.
2. The everted or splay-foot, or position of muscular and ligamentous relaxation.

He states that it is among those who stand in the everted position that flat and weak feet are found; that it is an unnatural position forced by education upon the race, and that while it is an admirable position to assume occasionally when one must rest standing, the ligaments are not adapted to accept continuous strain and will inevitably stretch.

The strong position, standing with feet slightly separated, heels as far apart as the toes, is the better, because: (1) It is one of the greater stability, since a square is necessarily more stable than a triangle having sides of the same lengths; (2) it is the position in which the muscles and joints are in readiness for immediate action; (3) it is the position from which the proper gait is easily assumed.

He then states there are two extreme gaits in walking which merge into each other:

1. The Indian gait.
2. The splay-foot waddle.

He then states that all are agreed that the toes should turn in, in walking.

He says the key to the correct gait is this: In the correct stride the hip of the advancing leg is thrown forward as the foot is; in the waddle the hip is thrown or turned backward.

He states that the mechanism of walking is essentially that with one foot in an advanced, fixed, or pivoted position, the other foot swung forward and planted in a new advanced position, to be in turn the base or pivot for a new cycle of movement.

The correct stride is one in which the walker swings the body as well as the leg, the toe is turned in, not because the walker is pigeon-toed, but because the foot and body is swung around in an effort to coördinate and use all the body in walking.

In the incorrect gait, the start is the same, but the foot is advanced sideways and the hip swung backwards.

He gives a number of exercises, and says that all patent devices intended to support the arch should be avoided by soldiers.

J. O. WALLACE.

Ryerson, E. W.: Recent Advances in Orthopedic Surgery. *Tex. St. J. Med.*, 1914, ix, 285.

By Surg., Gynec. & Obst.

The author expresses satisfaction with results in cases of Pott's disease, treated by the method of Albee; i. e., transplanting a bone splint from the tibia to the split spinous processes of the vertebræ. In hip and knee tuberculosis of adults, the joint should be ankylased as soon as possible by a conservative resection or arthrodesis.

Deformities due to infantile paralysis may, in many cases, be corrected by tendon transplantation, using Lange's bichloride silk; insertions should be made into the bone, through drillholes. Suspension of the foot by heavy silk cords is successful in many cases of drop-foot where no transplantation can be done.

Abbott's method of treating scoliosis has given encouraging results, but requires more time than at first estimated.

All cases of arthritis deformans, usually due to toxins from some definite focus, which is most often in the tonsils, should have tonsillectomy performed as a routine measure.

Mechanical disturbances of fifth lumbar vertebræ and sacro-iliac joints are frequent causes of sciatica, lumbago, and backache. Arthroplasty for ankylased joints is successful in jaw, hip, elbow, shoulder, wrist, and finger-joints but disappointing in the knee-joints.

SURGERY OF THE SPINAL COLUMN AND CORD

Roth, R. E.: Spinal Curvature. *Australas. M. Gaz.*, 1914, xxxv, 1.
By Surg., Gynec. & Obst.

This article deals entirely with lateral curvatures. All spinal curvatures are either functional or organic. Functional curvatures when neglected become organic and are then incurable, but they can be improved or prevented from becoming worse. The causes of scoliosis are congenital or acquired. The acquired form follows deformities elsewhere in the body, distorting conditions due to disease of the soft parts, and continuous malposition from habit or occupation. Habit or occupational scoliosis should not occur and will not if proper postures are maintained during the time of development, education, work, or play. Lateral curvatures are often found among athletes and those who indulge in strenuous sports, particularly sports that develop the muscles of one side of the body more than the other.

The author uses a simple and rational treatment carried out daily for from two to six months. It is first necessary to reëducate muscle sense. The patient is placed in front of a mirror and all faults are pointed out; the corrected position is then assumed; and this routine is repeated before each exercise. Before prescribing curative exercises, the author tries to correct the spinal curve by placing the upper extremities in certain positions. This corrected position is called the keynote position, and is maintained during the prescribed exercises. The movements, though carefully given, are very fatiguing and exhausting; and for this reason there must be a constant watch kept for bad symptoms.

After about two weeks of curative exercises, improvement is noted not only in the spinal condition but in the general health as well. The author does not believe in spinal support for non-tubercular scoliosis.

R. O. RITTER.

Mayet and Delapchier, R.: Scoliosis and Chronic Appendicitis (*Skoliose und Appendicitis chronica*). *Ztschr. f. orthop. Chir.*, 1913, xxxiii, 250.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author found from repeated observations that chronic appendicitis often causes scoliosis. This opinion is confirmed by the fact that statistics of 112 cases of scoliosis in children show that there was chronic appendicitis in 42 cases, 37 per cent. On account of the pain localized on the right side and the contraction of the rectus and oblique muscles, the child bends to the right and thus a curve, convex toward the left, is formed in the lumbar region, and one convex toward the right in the dorsal region. If the children are rachitic or have weak muscles this scoliosis may grow worse, and even reach the third degree. Operation for the chronic appendicitis is strictly indicated, for treatment of the scoliosis can only be effective after appendectomy.

BÉLA DOLLINGER.

Conklin, C. B.: Typhoid Spine; with Report of a Case Complicated by Thrombophlebitis of the Left Femoral Vein. *Med. Rec.*, 1914, lxxxv, 157.
By Surg., Gynec. & Obst.

Typhoid spine is rather rare, only seventy-two cases being found in the literature—seventy-five per cent of the cases being male. The symptoms are pain and rigidity in the lower spine muscles, excitability, muscular twitchings, dermatographia, and rarely, a persistent Kernig's sign. It has been called perispondylitis and bone lesions have been demonstrated by röntgen ray. Osler, however, holds that it is purely functional. The course of the disease is from fifteen days to thirteen months and the prognosis is good. The treatment consists in immobilization of the spine, counter-irritation, and sedatives. The author reports a case of about six months' duration, accompanied by swelling of the left thigh with temperature of 101 degrees, which made a good recovery under adhesive strapping of the spine, thermocautery, bromides, and an elastic stocking.

W. A. CLARK.

Calvé and Lelievre: Radiography of the Vertebral Column in Profile in Pott's Disease. *Am. J. Orth. Surg.*, 1913, xi, 193. By Surg., Gynec. & Obst.

The earliest signs of tuberculosis of the spine shown by the röntgen ray is a thinning of the intervertebral disc. The profile röntgen picture of the spine shows that in the production of the kyphose and in normal flexion and extension the axis of movement is not, as has been said, in the posterior vertebral articulations as a pivot but in the center of each body. A line connecting the centers of all the bodies is called the neutral line. The production of the kyphose is shown to be identical with a true pathological fracture of the spine. However, in repair there is no neoformation to produce callus as in traumatic fracture. The profile method of study also shows that there is no trace of cicatrization in a focus of Pott's disease for two or three years. There is in complete cures a fusion of the remaining healthy portions of the bodies but no new formation of bone.

W. A. CLARK.

Potel, G., and Veau: Surgery of Tumors of the Spinal Column and Cord (*La chirurgie des tumeurs du rachis et de la moelle*). *Rev. de chir.*, 1913, xlviii, 477.
By Journal de Chirurgie.

The author reports 107 cases of vertebral tumors and states that most of them were carcinomata, sarcomata being rarer. The carcinomata were always secondary, generally to cancer of the breast; 31 cases were hydatid cysts. Kyphosis was generally present; contracture and immobilization appearing early.

In such cases there is extremely sharp pain which varies in location with the site of the tumor and is

not overcome by rest; it is due to compression of the spinal nerve-roots. If the anterior roots are involved there may be painful paralyses (Charcot). These root symptoms precede the medullary symptoms, which do not show anything especially characteristic. There is first flaccid paralysis with abolition of reflexes, and then spastic paralysis with exaggeration of reflexes, and at length trophic disturbances.

Of the above cases, 55 were operated on: 32 of them for sarcoma; 15 for hydatid cyst; and only 3 for carcinoma. There were 19 deaths, 30 per cent, and 13, 23 per cent, recoveries without recurrence for several years. There were 22 per cent of permanent improvements and the rest showed temporary improvement. The greatest improvement was shown in the lessening of pain.

The technique varies with the nature of the lesion; sarcoma being particularly difficult to remove, because it bleeds and invades the neighboring tissues. If a radical operation is impossible it is well to cut the posterior roots to overcome the pain.

Extravertebral tumors are tumors of neighboring organs which invade the cord and column, secondarily. Of these there are 72 per cent sarcoma; 16 per cent carcinoma; 10 per cent hydatid cysts; 2 per cent, fibroma, lipoma, etc. Invasion sometimes takes place by destruction of the vertebræ, but more generally through the vertebral foramina.

There is pain accompanying these tumors, and when the tumor penetrates the cord there are medullary symptoms, motor and trophic, which often appear in a rapid and overwhelming fashion.

Operation is rarely possible in these cases, because the tumors are generally mediastinal sarcomata, which cannot be reached. The dorsal tumors can be removed, but this is the most uncommon localization. It is always necessary to resect the spinous process and lamina and separate the dura mater from the pedicle of the tumor carefully.

Non-medullary tumors inside the spinal cavity are the most frequent and the most amenable to surgical treatment. The majority are sarcomata, carcinomata being rare and always secondary. They are generally of about the same size, are solitary, can be isolated from the neighboring tissues and rarely recur—95 per cent of cases did not recur. They generally originate in the dura mater; the operation can be extradural in about 62 per cent of the cases, and fortunately the posterolateral location is the most frequent. The compression of the cord is mechanical and consequently curable after removal of the tumor.

In the first stage there is persistent pain of long duration which may be on one or both sides, then Brown-Séquard's syndrome appears. Finally, there is spastic and then flaccid paraplegia, with the corresponding disturbances of the reflexes, with loss of control of the sphincters and trophic disorders. They appear in the order caused by a horizontal lesion, not a vertical one, which is an important point in differential diagnosis.

There were 27 cases of medullary tumors. These were generally gliomata or sarcomata, in which the spinal column is intact and, generally the meninges also. The tumor may be capable of enucleation or it may have infiltrated the cord.

These tumors manifest themselves by increase in volume of the cord and absence of pulsation in it; they are solitary and do not give rise to metastases; when they are encapsulated they are under pressure, so that they project from the cord as soon as an opening is made.

The important thing to determine is the location of the upper end of the tumor; this is done by ascertaining where pain first appeared, and by the upper limit of the zone of hyperæsthesia, which appears above the zone of anæsthesia.

The operation is simple laminectomy in Sim's lateral position and if it is necessary to open the dura mater, the Trendelenburg position should be adopted to avoid the escape of the cerebrospinal fluid.

Ether is preferable as an anæsthetic, though local anæsthesia may be used. The incision should be at the supposed site of the tumor. The muscles are pulled aside and the opening tamponed to assure hæmostasis; preliminary removal of the spinous processes facilitates the laminectomy. If the tumor is extradural it is solitary and can be enucleated; but if it is intradural, the dura mater should be opened gently and slowly to avoid a too rapid escape of the cerebrospinal fluid. When the tumor appears it should be enucleated if possible, or curetted if it is a sarcoma (Flatau).

If it is inoperable, section of the posterior roots is indicated; if it does not appear it may be necessary to explore the anterior surface of the cord, drawing it up with a blunt hook. If it is inoperable and the cord completely destroyed, the section of the cord containing it may be removed, which will abolish pain; however, if it is inoperable and the cord only partially destroyed it is better to leave it alone. Unless there are special indications the entire operation should be performed at once. Drainage is dangerous and exposes the parts to infection. Every precaution possible should be taken to avoid infection and cicatrization.

Often after the operation there is an exaggeration of the symptoms which is only temporary, and improvement shows first in the sensory and then in the motor symptoms. The mortality at present is about 15 per cent and shows a tendency to improve.

J. OKINCZYC.

Pussep, L. M.: Diseases of the Cauda Equina and Their Operative Treatment (Über die Erkrankungen der Cauda equina und die operative Behandlung derselben). *Russk. Vrach*, St. Petersburg, 1913, xii, 136r.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

In discussing the symptoms of diseases of the cauda equina and the conus medullaris, the author says that in conus medullaris there is often dissocia-

tion of sensation; pain and fibrillary twitching are rare; the diseased zones are symmetrical; there is only a slight tendency to the formation of bed sores in the sacral region; but the function of the bladder and rectum is almost always disturbed.

In disease of the cauda equina, sensation is always disturbed; there is generally pain; fibrillary twitching is frequent; and the diseased zones are generally not symmetrical. Sacral bed sores occur only where the disease is of very long duration, and the bladder and rectum are not always involved. One important point to be observed is that on pressure on the nerves of the cauda equina there is frequently pain in the leg, generally on one side only, which is often the only symptom. The author lays great stress on the röntgen picture. The author gives a review of all the cases published in the literature, in which operation was undertaken for disease of the cauda equina. He divides them into four groups: (1) In the first group are the cases in which there was pressure on the cauda equina from tumors or inflammatory processes of the spine; there are 17 cases reported in this group. (2) The second group includes those in which there was a tumor inside the dura or in the cauda equina itself; there are nine of these. (3) The third group embraces traumatic injuries of the cauda equina; two cases have been published which were operated on successfully. (4) In the fourth group there is only a single case of Alessandria's, in which there was an inflammatory process of the dura mater.

He adds eight cases of his own which were operated on and one which was not; in three cases there were traumatic injuries of the cauda equina. In the first case, after a blow on the back, paralysis of both legs occurred. On operation the arch of the fourth lumbar vertebra was found to be pressing on the cauda equina. On opening the dura there were adhesions and a cyst as large as a hazelnut, which was removed. The patient's condition improved very quickly after the operation, but three months later he died from purulent pyelitis. The second patient complained of pain in the legs and convulsive twitching which began after a severe injury. Operation showed that there were extensive adhesions of the nerves of the cauda equina to each other and to the dura as a result of a fracture of a part of the sacrum; these, so far as they could be reached, were freed. The patient was discharged free of symptoms 5 weeks later. The third patient complained of weakness in the legs which had existed for eight years, and bladder disturbances, which had persisted for two years. The röntgen picture showed the end of a knife between the first and second sacral vertebrae. The knife, which had been in the patient's body fifteen years, was removed and the patient discharged much improved.

In four other cases there were inflammatory processes of the spinal meninges. In the first case the patient complained of pain and weakness in the legs. On operation a cyst as large as a hazelnut was

found under the pia and removed; the patient was discharged, markedly improved, after three weeks. The second patient complained of pain in the left leg, which had begun several months before, after he had received a blow on the sacrum. On operation the dura was found very much thickened and there were nodules the size of pin-heads in individual nerves of the cauda equina, which were removed. The patient was discharged cured after four weeks. The third patient complained of pain in the right leg. On operation there was a cyst outside the dura in the region of the third sacral nerve. It was removed and the patient discharged four weeks later very much improved.

In the fourth case there was pain in the right, and occasionally in the left leg; there had previously been paræsthesia. On operation, two cysts as large as plums were found between the first and second sacral vertebrae, one of which was inside the dura and one outside it. The former could not be completely removed; but the patient was discharged much improved a month later.

In conclusion the author reports the following gunshot injury. The patient was injured during the Japanese war in 1904; in 1907 he began to have pain in the spine on motion and weakness in the legs. The röntgen picture showed the bullet in the region of the fourth lumbar vertebra, but it could not be found on operation. Severe pain was experienced again in 1910 and the röntgen picture showed that the bullet, which lay inside the body of the vertebra, had sunk and become located in such a way that its point pressed on the cauda equina. Operation was performed again and the bullet found and removed, after which the patient was discharged completely cured. In the last case there was a tubercular process in the sacrum, so it was treated conservatively with the result that the pain completely disappeared and the rest of the symptoms improved. From all of which the author draws the conclusion that in chronic inflammatory processes in the region of the cauda equina, as well as in traumatic injuries, operation is indicated and gives good results. He further calls attention to the fact that, as several cases show, the symptoms may not appear until a long time after the injury.

VON HOLST.

Hunkin: Experience with Foerster's Operation.

Am. J. Orth. Surg., 1913, xi, 207.

By Surg., Gynec. & Obst.

The author reports fourteen cases in which he performed section of the posterior nerve-roots—Foerster's operation—for spastic conditions with good results in nearly all. Cessation of the spasm occurred immediately after the operation and did not recur to any extent. The operation, as described, consists in chiseling off the spinous processes at the base, turning them back with soft parts attached, removing the posterior arch of the canal, opening the dura and resecting 1 cm. of the posterior roots on each side.

W. A. CLARK.

DISEASES AND SURGERY OF THE SKIN, FASCIA, APPENDAGES

Kolb, K.: Experimental Study of the Contraction of Transplanted Fascia, and Its Significance in Plastic Operations and Around the Intestine (Über die Schrumpfung der frei transplantierten Fascie und die Bedeutung derselben bei plastischen Operationen und bei Umschnürung des Darmes: Experimentelle Untersuchungen). *Deutsche Ztschr. f. Chir.*, 1913, cxxv, 398.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Kolb found, by measurement, that a piece of fascia removed from the body immediately contracted a fifth or sixth of its length and breadth.

This primary contraction, however, has no importance in practice. In order to determine whether, when transplanted, it underwent a secondary contraction, he placed rings of fascia around the intestine and fastened them. Symptoms of stenosis and ileus appeared after a time, showing that fascia transplanted without being under tension contracts a little, but that this contraction is considerably less than the primary one. This secondary contraction must be allowed for in transplanting fascia for operations on the intestinal tract and on the face.

KIRSCHNER.

MISCELLANEOUS

CLINICAL ENTITIES — TUMORS, ULCERS, ABSCESES, ETC.

Rous, P., and Murphy, J. B.: On the Causation, by Filterable Agents, of Three Distinct Chicken Tumors. *J. Exp. Med.*, 1914, xix, 52.

By Surg., Gynec. & Obst.

Rous and Murphy describe a third chicken tumor which is transmissible by means of a filterable agent. The three tumors are very unlike, the third being a spindle-celled sarcoma of peculiar intracanalicular pattern.

The causative agents pass through Berkefeld cylinders impermeable to small bacteria, and each agent is distinct in that it gives rise only to growths of the exact kind from which it was derived. Two of the three are found to be active in tumor tissue which has been dried or glycerinated.

JAMES F. CHURCHILL.

Brem, W. V.: Treatment of Tetanus by the "Rational" Method of Ashhurst and John; the Development of Suppurative Serum (Aseptic) Meningitis, Following the Intraspinal Injection of Tetanus Antitoxin; with Report of a Case. *J. Am. M. Ass.*, 1914, lxii, 191.

By Surg., Gynec. & Obst.

According to Ashhurst and John the rational use of tetanus antitoxin consists in (1) the intraneural injection of antitoxin; (2) the intraspinal injection; (3) the intravenous injection; and (4) the infiltration of the tissues about the site of the injury. The quantity used should be very much greater than the quantity heretofore given by the subcutaneous route. These authors feel that with their method, the old view that antitoxin is of no avail after the symptoms of tetanus have developed must be abandoned. Brem treated four cases of tetanus by this method in 1910, at the Colon Hospital, Canal Zone, and used chloretone and morphine as sedatives. One patient whose case was a severe one with a ten-day incubation period recovered.

Brem summarizes a case as follows: A young man of 21 years with cephalic tetanus, which after six days' incubation showed a gradual onset of symptoms. Treatment, which was begun eight days after the injury and two days after the onset of symptoms, consisted of intraneural injection of a small quantity of tetanus antitoxin into the left facial nerve; intraspinal injections of 23,000 units; intravenous injections of 60,000 units; subcutaneous injection of 8,000 units; infiltration of tissues about the site of the injury with 2,000 units; total quantity of antitoxin, 98,000 units; development of meningitis within six hours after first intraspinal injection, purulent fluid sterile by microscopical and cultural aerobic and anaerobic examination. There was rapid recovery from both the tetanus and meningitis.

Brem considers that this case demonstrates that the introduction of a foreign serum into the spinal canal may cause a reaction that presents all the clinical and pathological evidences of an acute suppurative meningitis, except that no bacteria can be demonstrated in the purulent cerebrospinal fluid. It seems plausible that exacerbations frequently following the intraspinal injections of serum in meningococcus meningitis are due to the reaction to the horse-serum, and that it is independent of the condition of hypersensitiveness.

L. G. DWAN.

BLOOD AND LYMPH-VESSELS

Dibernardo, A. L.: Traumatic Arteriovenous Aneurism of the Common Carotid and the Left Internal Jugular; Extirpation; Recovery (Anéurisme traumatique artério-veineux de la carotide primitive et de la jugulaire interne gauches; extirpation; guérison). *Clin. chir.*, 1913, xxi, 2189.

By Journal de Chirurgie.

Cases of the above are rare. Since 1889 there have been only 11 operations for arteriovenous aneurism of the common carotid and the internal

jugular, and only four of these have consisted in extirpation of the sac.

One patient was a young girl of 15, who had been shot three years previous. The bullet had entered above the left clavicle between the sternal and clavicular heads of the sternomastoid, and, a few weeks later, an abnormal development of the subcutaneous venous network of the left side of her face was noticed. Recently she had had subjective symptoms, such as periodical headaches, epistaxis, photophobia of the left eye, and especially buzzing in the head which disturbed her sleep.

The parents were most distressed by the facial asymmetry which had developed; the frontal and the left inferior maxillary had developed abnormally; the venous dilatation had extended to the frontal and right parietal regions and, in the left lower eyelid, they were as large as the little finger, showed rhythmic pulsation synchronous with the radial pulse, and a thrill. The left eye projected, and the conjunctiva was injected, but the two pupils were the same size. Under the sternomastoid on the left side there was a tumor the size of an egg with the lower pole at the supraclavicular scar. It pulsated synchronously with the heartbeat and a thrill was perceptible; and pressure did not change its character or reduce its volume.

The tumor was beyond a doubt an arteriovenous aneurism of the common carotid and internal jugular caused by the traumatism. An incision was made over it, and the sac, which was developed from the internal jugular, having been isolated, the distal and proximal ends of the vein were ligated. The point of communication with the common carotid was torn, and a severe hæmorrhage ensued. It was controlled, however; the edges of the tear caught with forceps and ligated; the aneurismal sac with a part of the jugular on each side was removed; and the sutured segment of the carotid was left in place.

The operation took three hours. Branched and Vanverts' cases presented similar difficulties; in Herzen's, it was necessary to re-resect a part of the clavicle and of the manubrium of the sternum; in Von Oppel's, the whole of the sac could not be removed notwithstanding the fact that the operation lasted four hours. But in spite of that, all five of the operations were successful. PIERRE FREDET.

Mirotworzeff, S. R.: Ligation of the Carotid Artery in Human and Experimental Pathology; and Its Relation to the Collateral Circulation (Zur Lehre über den kollateralen Kreislauf. Die Unterbindung der A. carotis in der experimentellen und menschlichen Pathologie vom Standpunkte dieser Lehre aus). *Arch. d. chir. Klin. d. Prof. W. A. Oppel*, St. Petersburg., 1913, iv, 235.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author reviews the work of Prof. Oppel and his school, in studying the collateral circulation and the new ways for investigating the ligation of the great arteries; this work applies especially to the ligation of the carotid artery and the changes which

take place in the brain after it. Anatomically the collateral pathways have been studied before; now the chief attention must be directed to the strength and conditions of this collateral circulation. The brain is not injured by ligating the carotid as soon as the collateral circulation is established. To discover when this takes place, the author carried out ten experiments on animals. The common, right and left carotids and the vertebral were exposed in dogs; a T-tube was inserted in one common carotid, and connected with the manometer of a Ludwig's kymograph. The arteries were then compressed in different combinations, certain regions thus excluded, and the variations in blood-pressure studied.

The most interesting results of the experiments are the following: On compression of all four arteries in the neck, the two carotids and the two vertebrals, the blood-pressure does not fall to zero, as would be expected, but remains at 46. This figure shows the strength of the collateral circulation, which may be sufficient to provide for the nutrition of the brain; this collateral circulation is of considerable volume and depends on the strength of the general blood-pressure. Hæmorrhage, therefore, is very detrimental to the formation of a collateral circulation. If the external carotid is now ligated, the collateral blood-pressure can be raised, even after hæmorrhage has taken place.

Theoretically, therefore, in ligating the common carotid the external carotid of the same side should also be ligated. The pathway for the discharge of blood is thereby decreased and the strength of the collateral circulation increased. Experimentally, conditions favoring the development of the collateral circulation can be produced, chiefly by compression of different arteries. The second part of the work is devoted to clinical results and a comparison of them with the experimental ones. From Pilz's statistics, ligation of the common carotid has been performed 914 times with a total mortality of 39.8 per cent; since that time the mortality has decreased from 31 per cent to 21 per cent.

The author reports three cases of his own in which the common carotid was ligated for severe hæmorrhage. Death occurred in all the cases, after cerebral disturbances, ligation for hæmorrhage giving the worst prognosis. Death following cerebral symptoms is explained by the fact that, on account of the low blood-pressure after a severe hæmorrhage, a collateral circulation cannot be established. The results of the ligation of the common carotid, therefore, depend on whether it is possible to establish a collateral circulation or not.

SHAACK.

POISONS

Mitchell, A. P.: The Infection of Children with the Bovine Tubercle Bacillus. *Brit. M. J.*, 1914, i, 125. By Surg., Gynec. & Obst.

Twenty-four of seventy-two cases with tuberculous cervical glands were under three years of age.

Of these twenty-four, only two were proven to be of the human type; the rest were all bovine. Eighty-four per cent of the children thus afflicted two years of age had been fed from birth on unsterilized cows' milk and in only three cases was a history of tuberculosis found in the family.

The author states that cows not having tuberculosis of the udder may readily transmit the tubercle bacillus in the milk. He emphasizes the extreme importance of adequate dairy inspection and the taking of the tuberculous cows out of the herds, as one tuberculous cow may readily infect the milk of a good sized herd.

The relations between the channels of infection and the group of glands involved is discussed. He says the more frequent involvement of the glands in front of the sternomastoid muscle in the upper carotid region is strongly suggestive of the faucial tonsils being more often a source of infection than the adenoids. He investigated the faucial tonsils in 64 consecutive cases of children suffering from tuberculous disease of the upper deep cervical glands. Twenty-four of these cases showed histological evidence of tuberculosis in the tonsils, but no clinical signs were present.

The chief sites for tuberculous lesions in the tonsil are in the deeper parts of the crypts, especially the supratonsillar group, or immediately under the mucous membrane near the mouths of the crypts, or deep in the tonsil close to the posterior capsule. He concludes that cow's milk containing bovine tubercle bacilli is clearly the cause of 90 per cent of the cases of tuberculous cervical glands in infants and children residing in Edinburgh and the surrounding district.

M. S. HENDERSON.

Massini, R.: Methods of Cultivating Anaërobic Bacteria; and Their Clinical Importance as the Cause of Putrid Suppuration, Especially of Putrid Empyema (Über anaërobe Bakterien. Bedeutung derselben für die Klinik, als Ursache jauchiger Eiterungen mit besonderer Berücksichtigung der jauchigen Empyeme. Beitrag zur Methodik der Anaërobenzüchtung). *Ztschr. f. exp. Med.*, 1913, ii, 81.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author has studied a number of the known anaërobes, especially in their relation to human pathology. He adds also the description of three new species of anaërobic bacteria: bacillus disciformans, bacillus annuliformans, and bacillus anaërobis diphthoides. He comes to the conclusion that the frequently asserted variability of anaërobes is a mistake. Probably pollutions of the cultures with other micro-organism are so interpreted, for anaërobes readily grow in symbiosis.

As previous methods of culture do not enable one to be sure of having a pure culture or of recognizing pollutions, the author has devised a method that enables him, in a relatively simple way, to plant a great number of series in plates. The bacteria promulgate faster and grow better if riba or erepton is added to the nutrient medium and salt left out.

Pollutions are easily recognized by reinoculations on erepton bouillon.

The author confirms the statements of other authors that the putrid decomposition of pus is generally due to anaërobes. He could grow anaërobes from all the specimens of putrid pus examined, from empyema, liver abscess, putrid bronchitis, etc. The pus was generally thin and contained few leucocytes; the wounds generally showed little tendency to heal; there were only slight signs of reaction, and the patients often died suddenly. The author recommends Bülow's siphon drainage in the treatment of purulent empyema.

STAMMLER.

Ten Broeck, L. L.: A Rapid Method of Isolating Pathogenic Streptococci from Contaminated Fields. *J. Am. M. Ass.*, 1914, lxii, 31.

By Surg., Gynec. & Obst.

The technique devised by the author is based upon the following principles: The use of liquid media as suggested by Sabouraud; the extreme susceptibility of rabbits to streptococci; the peculiar reaction and vulnerability of the peritoneum to streptococcal infections, as described by Murphy. It was found that by grading the dose the peritoneum would fall a prey to the streptococcus even before the other pathogens took hold and that a certain point of the disease was reached when there would be the characteristic dry peritonitis or retroperitoneal cellulitis. Intraperitoneal injections of from 2 to 5 ccm. of fresh bouillon cultures of a mixed growth were made every two or three hours. At the earliest signs of sepsis the animal was chloroformed and a dry peritonitis was found yielding pure cultures of intensely virulent streptococci.

This method has been used in four cases of subcutaneous infection, in all of which the diversified bacteriological flora had misled the attendants and in which the method not alone promptly cleared up the diagnosis but was made the basis for proper immunological measures with favorable results.

The author does not suggest that this method be used to the exclusion of others. It is to be used in conjunction with other approved methods. Neither is it to be expected that there will always be a pure streptococcal culture to the exclusion of other pathologists, but the peculiar reaction will help establish the diagnosis. The more virulent the streptococcus, the more certain will be the result.

In persistent postnasal infections, the author has been able to find the streptococcus by first using negative pressure to draw from the deep sinuses and then, having the patient swallow to isolate the posterior nares, he changes from negative to positive pressure, opening the other nostril. A stream of air in this way is forced into one nostril and out the other and can be directed into suitable media. The colonies on the solid media are for the most part discrete and are derived from the posterior nares just as well as from the anterior, a result impossible to attain by any method requiring the use of a swab.

EDWARD L. CORNELL.

SURGICAL THERAPEUTICS

MacFarlan, D.: Notes in the Study of Potassium Mercuric Iodide. *J. Am. M. Ass.*, 1914, lxii, 17.
By Surg., Gynec. & Obst.

The author presents quite an extensive study of the drug. He shows that in a dilution of 1 to 80,000 it renders cultures of bacillus typhosus, staphylococcus, bacillus lactis bulgaricus, yeast-sugar solution and bacillus acidi lactici, sterile; even in a dilution of 1 to 90,000, the bacillus typhosus was killed. The preparation of the drug, its toxicity, the effect on physiological activities, and its uses are discussed. Little can be said of the noxious effects on the gastro-intestinal tract when the drug is taken internally in mild doses. There is no inhibition of ferment activity and such harm as could occur would arise from the destruction of intestinal bacteria.

Regarding its internal uses the author states that it seems to have a marked effect on all catarrhal conditions of the mucous membranes, clearing up the common cold, apparently shortening the course of croup, and modifying the acute infections of the nose and throat and bronchi.

It has its greatest field of usefulness, however, as an antiseptic. It is practically universal in its possibilities, for in great dilutions its local effects and toxicity are insignificant while its germicidal qualities still remain high. The value of these virtues can readily be realized from the following facts brought out by the author:

1. The drug may be taken internally in doses of 5 drops of a one per cent solution without toxic effect.

2. A one per cent solution but slightly irritant.

3. A dilution of 1 to 80,000, or nearly one thousandth of one per cent, exhibits marked germicidal effect.

By its use the purulent discharge of so many minor surgical cases such as infected burns, old leg ulcers, and ragged wounds is rapidly cleared up. Even when the infection is somewhat subcutaneous, as in felons and boils, and there is as yet no pointing or definite formation of pus, a wet dressing of one per cent potassium mercuric-iodide will usually reduce the prolonged course of the case and will frequently abort it altogether.

For sterilizing instruments the drug is excellent except for its tendency to tarnish if left in contact too long; this, however, can be easily overcome by the addition of sodium bicarbonate to the solution.

EDWARD L. CORNELL.

ELECTROLOGY

Morton, R.: Discussion on the Technique and Standardization of Bismuth Meals. *Proc. Roy. Soc. Med.*, 1913, vii, Electro-Therap. Sect., 5.
By Surg., Gynec. & Obst.

Morton observed that the adoption of a standard opaque meal would make results comparable. He

had sought information from various radiologists on the following points:

1. Total quantity.
2. Amount of bismuth or barium, which preferred and why.
3. Medium of suspension.
4. Consistency.
5. Flavoring, sugar, etc.
6. Preparation of the patient.

Morton remarked that the disagreement of physicians was an ancient gibe, but the truth of it was never more in evidence than when he came to tabulate the replies, about the only point of agreement being the use of sugar and flavors to make the meal palatable. The total quantity varied from 5 to 20 oz., about half gave 10 oz., the average being 13 oz. The amount of bismuth or barium ranged from 1 to 4 oz., the average being 2 oz., two-thirds of those replying used bread and milk as a medium. Other media employed were blanchmange, jelly, lactose emulsion, gum solutions, buttermilk, corn-flour, and arrowroot. The majority prepared their patients as for an anæsthetic. Morton noted that the atomic weights of bismuth and barium were 210 and 140 respectively, hence larger volumes of the latter were necessary. He suggested the possibility of the chemists producing a lighter form of barium sulphate like the light form of magnesium carbonate. Morton also suggested that if oxychloride of bismuth could be made in a lighter form it would be ideal.

HERTZ described his routine, which included barium sulphate, which he had been using two years. He used two ounces of it in four ounces of oatmeal porridge with one ounce of milk and a little brown sugar.

Others who participated in the discussion were Aldridge, Bythell, Bruce, Cooper, Codd, Bailey, Batten, and Holland. On motion, a Committee of the Section, comprising Hertz, Morton, Scott, Barclay, and Jordan, was appointed to further investigate the matter.

ALBERT MILLER.

Shoop, F. J.: X-Ray Therapy. *Long Island M. J.*, 1914, viii, 7.
By Surg., Gynec. & Obst.

Shoop claims that for deep gynecological therapy it is necessary to have a machine or coil that will show eight or nine degrees of penetration by the Benoist scale, and a tube having sufficient vacuum resistance to allow only one, or at most one and a half milliampères of current to flow through it.

He cites facts demonstrating that it is the rays halted in the tissue and absorbed by it, and not the rays that pass through it which affect that tissue, and that the hard rays that pass through may, by suitable screens or filters, be halted at certain depths as desired and converted into absorbable rays for therapeutic work. Aluminum plate and layers of satrap paper are used as filters. By using a hard tube and raying in turn several different small areas of skin through apertures in a lead sheet placed over the part to be rayed, and changing the angle of the tube

each time, the rays were all directed towards the center of the mass to be rayed in the deep tissue. By this cross-fire method it is possible to produce an erythematous dose at the point desired, without in the least damaging the overlying tissues. The three types of uteri benefited by deep raying are the fibromatous, the carcinomatous, and the sclerotic. Conditions that, on account of their tendency to deplete and exhaust the possessor by repeated hæmorrhages, present more or less of a problem to the gynecologist as to what method of dealing with the particular case will give the best chance for a cure or relief.

He concludes by quoting Döderlein who reports thirty-two cases of myoma and hæmorrhage which received prompt and permanent benefit under radiotherapy with no bad effects. The tumors disappeared entirely in many cases. More surprising still, he found a combination of röntgen ray and mesothorium treatment effective in many cases of uterine cancer. Six cases are described and reproductions given of the microscopical picture before and after-treatment. He thinks the rays had a direct effect on the carcinoma-cells and not, as has been previously held, that the cancer-cells were affected secondarily by contraction of the surrounding connective tissue. He also reports eight cases of unsuccessful treatment of cancer, which had returned after operation. JOHN G. BURKE.

Pfahler, G. E.: Present-Day Danger of Röntgen Ray Burns and How to Prevent Them. *J. Am. M. Ass.*, 1914, lxii, 189. By Surg., Gynec. & Obst.

Pfahler believes that the combination of enthusiasm for the use of the röntgen ray, and a false sense of safety will lead to disastrous results in the hands of untrained and unguarded physicians and that the present-day use of the röntgen rays is perhaps made safe only because there is so much more knowledge concerning their use and danger. He believes that most of the burns which have been produced by physicians lately are due to a lack of ability to judge the penetration of the rays needed.

The author sees great danger in the increased use of the fluoroscope if physicians do not take the trouble to study the underlying principles governing the use of the röntgen ray. To avoid röntgen burns during examinations, Pfahler suggests that as small an amount of rays be used as is consistent with the examination; second, that the quality of the rays used be such as will penetrate the tissues; third, that every examination be made as short as possible, thereby lessening the total amount of rays to be absorbed; fourth, intensifying screens should be used when practical; fifth, that filters be used for the elimination of the softer rays; sixth, that the rays be confined to the part actually under examination.

Burns to the operator may be avoided (1) by keeping entirely out of the field of rays, by working from an adjoining room with lead-lined walls between, or by the use of lead-lined cabinets; (2) by

confining the rays about the tube so that the only way of exit is through the aperture made for the examination of the patient; and (3) by means of shields, aprons, gloves, etc.

Burns during röntgen therapy may be avoided (1) by following the same general principles referred to in the diagnosis; (2) by measuring each dose given and never exceeding the limit of skin toleration as indicated by the dosimeter; (3) by allowing an interval of three weeks between the repetition of the dose, on any particular area of skin; (4) by the use of more filtration than would be used in diagnostic work; (5) by keeping in mind the fact that epithelium and glandular tissues are more sensitive than any other tissue to the ray; (6) by avoiding any other form of irritation on the skin treated, such as counterirritation, high frequency currents, liniments, stimulating ointments, anti-septics, etc.

Pfahler believes that röntgenology is more distinctly a specialty than any other, because to master it one must be a good physician, must have a good general knowledge of pathology both in general medicine and the specialties, must have a large equipment, must give much time to the mastery of details, and must always be cautious.

EDWARD H. SKINNER.

Riehl, G.: Carcinoma and Radium (Carcinom und Radium). *Wien. klin. Wchnschr.*, 1913, xxvi, 1645. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The Vienna Central Clinic for radium treatment has at present 1½ gms. of radium, but the greater part of this has been available only since August, 1913. The clinic is directly connected with an outpatient department in which the practicing physicians of the city can treat their patients; the cases treated inside having a special ward, provided with radium, set apart for them. The apparatus is described, the salts used, the entire radium content and the per cubic centimeter of surface irradiated, and the tin-foil filter 1/100 mm. thick for the absorption of the β -rays—the γ -rays being excluded by surrounding the material with gummed paper. In stating the number of milligram hours used it is necessary to give such information, and state the kind of filter material used and its strength. Platinum and aluminum are recommended as filter materials, because of the comparatively slight degree of irritation from their secondary rays—the so-called Dominici tubes for holding radium are made from the former metal.

In deep irradiation, in which the metal filter is of primary importance, it is well to put cotton, wool, paper, or something of the sort between the latter and the skin to avoid the effect of the secondary rays. The effect of secondary rays in deep irradiation seems to depend on secondary rays originating in the tissues. Attempts to sensitize the tissue in this direction have not given any definite results. In the treatment of superficial carcinoma these considerations are of no importance.

With the use of relatively small doses of radium there is nothing new in the treatment of skin cancer, but by the application of large doses, several thousand milligram hours, even large skin carcinomata were favorably affected. This was also true in a case of recurrent mammary carcinoma with a dose of 23,000 milligram hours, but in giving large doses the surrounding healthy tissues were also injured, although no indirect effect was demonstrable on metastases, lymph-glands, etc., that were not irradiated. In intensive irradiation, even with strong filtration, there are sometimes necroses, in which the blood-vessels remain intact for a long time, and there is a more or less injurious effect on the general condition. Too weak irradiation, on the other hand, may stimulate the growth of the tumor.

MEIDNER.

Dieffenbach, W. H.: Radium in the Treatment of Cancer. *Med. Rec.*, 1913, LXXXIV, 1068.

By Surg., Gynec. & Obst.

The author gives a résumé of Dieffenbach's experience with radium. In one case a laparotomy was performed for the express purpose of procuring access to an inoperable sarcoma of the groin and injecting the same with an ounce of gelatine containing 20 mg. of 25,000 activity radium bromide. The injection was followed by irregularity of myocardial contractions, the attack lasting for thirty-six hours. The patient returned home in two weeks, apparently cured, and within four months the large mass, which was fully eight inches in diameter, had become much smaller. The patient was apparently in good health for two years, but finally died from oedema of the lung, ascribed to metastases.

Post-mortem examination showed the tumor to be much reduced, having a diameter of about two and a half inches. Cicatrization had set in, but had not become complete, so that while parts of the tumor had been destroyed, others escaped destruction, but later took on active growth, finally completely destroying the cicatricial tissue.

Aside from skin lesions, the writer has treated a number of cases of carcinoma, including inoperable

carcinoma of the neck, the liver, the spleen, the stomach, and inoperable carcinoma of the rectum.

The principle of dosage to be remembered in all cases is that short doses stimulate, while large, heavy doses inhibit cellular growth. This fact has been demonstrated on seeds, amœba, and on living tissues.

In conclusion, the writer expresses his conviction that the battle against malignancy is not as confined and hopeless as is generally pictured. In many so-called inoperable lesions, the combination of surgery with irradiation will prove successful.

JAMES T. CASE.

Schindler, O.: Radium and Mesothorium Treatment of Malignant Tumors (Erfahrungen über radium- und mesothoriumtherapie maligner Tumoren). *Wien. klin. Wchnschr.*, 1913, XXVI, 1413; 1463. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author has treated a series of malignant tumors of various kinds with large doses of radium and mesothorium, reckoned in milligram hours, and gives a detailed report of his very favorable results. He shows the marked advantages of massive doses as compared with smaller doses. Radium and mesothorium are alike in this respect. The γ -rays of radio-active substances have the advantage over röntgen rays of having a deeper effect and of being easier to handle. It is not necessary, as the author shows by a case, to always work with several hundred mg. of radio-active substance. The same results can be obtained by the continuous use of smaller doses for weeks at a time.

The favorable effects of post-operative irradiation are shown; he recommends the prophylactic irradiation of recovered cases to avoid recurrence; and, like Wickham and Degrais, recommends irradiation in connection with surgical procedures to improve the results. He believes the treatment of operable cases should be limited to superficial tumors, but that all others should be operated on first and then treated with the rays; and that inoperable tumors should, as often as possible, be rendered operable by the use of the rays. In all cases where metastasis has taken place the rays can be used with advantage for the treatment of symptoms.

LEWIN.

GYNECOLOGY

UTERUS

Von Hansemann, D.: Precancerous Conditions
(Über präcanceröse Krankheiten). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxiv, 149.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The cause of cancer is chronic irritation; this irritation leads to the disease, however, only if there is an individual predisposition. In order for cancer to arise there must be an anaplastic transformation in the character of the cell caused by the chronic irritation. The greater the predisposition, the shorter the period of irritation necessary to produce cancer. Cancer after 60 years of age is rarer because the individuals with predisposition have died before that age. There is no one single cause that applies to all cases of cancer; there probably are cases where anaplasia is lacking, and where the theories of Cohnheim, Thiersch, and Ribbert are not applicable.

The precancerous diseases belong mostly to the group of chronic inflammations which lead to hyperplastic changes. Other non-inflammatory hyperplasias that have such a tendency are polyps, hypertrophy of the prostate, goiter, hypernephroma; secondary atrophic conditions of the stomach with hyperplastic changes, especially in the region of the pylorus, such as follow malaria, syphilis, and intoxications; scar formation in the lower extremities (Bergmann); papillary growths in the rat's stomach from parasites (Fibiger); similar growths in the bladder (Loewenstein); transformation of stomach ulcer into carcinoma, though not always, as Aschoff justly claims; scars from burns; and, rarely, trauma is followed by the formation of carcinoma.

It is the duty of the house physician to contribute to the clearing up of this question by noting all factors that might lead to the development of cancer, such as chronic irritations, trauma, and other injuries. Only in this way can we see the first act, the precancerous stage, of which we now see only the last act, the cancer, in the hospitals.

VON GRAFF.

Scherer, A., and Kelen, B.: Treatment of Cancer of the Uterus with Röntgen and Radium Rays (Über die Behandlung des Uteruskrebses mit röntgen und radiumstrahlen). *Versamml. Deutsche Naturforsch. u. Ärzte*, Wien, 1913.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The authors report 218 cases of carcinoma which have been treated, since the beginning of February, 1910, with röntgen rays; since May 28, 1911, with combined treatment with röntgen and radium rays. In Group 1, in which the treatment consisted of irradiation after operation to prevent recurrence,

the authors have late reports from 58 of 77 cases; the remainder, mostly poor women from the country, stopped after one or two treatments. Ten of the 58 patients died; of the others, 5 are free from recurrence after three years, 15 after two years, 20 after one year, and 8 after six months. Compared with the earlier clinical data for cancer of the uterus this shows an improvement of 10.5 per cent in freedom from recurrence.

In Group 2, röntgen treatment alone was used in cases of inoperable carcinoma, since the beginning of 1910. In 103 cases of inoperable carcinoma of the uterus and 5 of carcinoma of the ovary, the following cases are worthy of mention: 24 cases under treatment for $1\frac{1}{2}$ to 2 years showed a remarkable decrease in the local and general symptoms; in 3 cases there was entire disappearance of the nodule; there were 2 cases of complete recovery that have been under observation for more than three years; 2 apparently inoperable cases became operable after treatment.

Group 3 comprised 12 miscellaneous cases, among them one cured case of actinomycosis of the ovary and one of cancrroid of the mammary gland. In Group 4 a combined treatment of röntgen and radium rays was applied for 1 to 2 hours with weak filter, in 14 cases, in the early stages, with no special results.

In Group 5 there was combined treatment with röntgen and radium, with strong filter and protracted application. In 4 cases of inoperable cancer of the cervix, after four months' treatment there was a marked, and in some cases, complete disappearance of the tumor and a decided improvement in the general condition. One case of carcinoma of the vagina and one of tuberculous ulcer of the cervix are still under treatment.

In malignant tumors, radium and röntgen rays should be used together, their values being about equal. If there is a palpable cancerous nodule, radium should be applied directly to it. The röntgen rays affect the infiltrations and metastases by a continuity that cannot be touched by the radium. The authors have been working for more than two years with pure radium carbonate, corresponding to 27 mg. of radium bromide. This relatively small amount of radium, enclosed in a lead capsule 1.3 mm. thick, must be left lying for days in the vagina. The hardest β -rays are present in the irradiations, but they have had no unpleasant reactions. To work with pure γ -rays and a lead filter 3 mm. thick does not seem to offer any advantages. The authors believe that by choosing the right thickness of filter and combining the radium treatment with the vaginal and abdominal application of röntgen rays,

valuable results can be obtained. This conclusion is of importance in view of the great numbers of patients needing radium treatment and the great cost of radium and mesothorium.

Czyborra, A.: Uterus and Ovaries after Röntgen Treatment; Case of Ovarian Tumor after Hydatid Mole (Uterus und Ovarien nach Röntgenbestrahlung. Ovarialtumor im Anschluss am Blasenmole). *Fortachr. d. Med.*, 1913, xxxi, 1037.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author reports the case of a woman who was treated for 15 months for myoma of the uterus; as the menses did not entirely cease and there were flecks of blood which disturbed the patient greatly, the uterus and adnexa were removed. The right ovary was found to be adherent behind the uterus; the uterus had decreased in size during the treatment, but contained a submucous myoma. Microscopical examination of the ovaries showed that on the left the graafian follicles as well as the primordial follicles were lacking and replaced by connective tissue. The right ovary did not contain any graafian follicles, but did show primordial follicles.

The author is inclined to attribute the incomplete result of deep röntgen treatment, in spite of large enough dosage, to the fact that a submucous myoma coexisted with an atypical location of the right ovary, and that they did not wait long enough for the effect of the last series of irradiations. The operation was done six days after the last treatment.

He also reports the case of a woman who, four weeks after the removal of a hydatid mole, presented a tumor on each side of the uterus, one as large as an orange, the other the size of a man's head. They were removed by operation and diagnosed as lutein cysts. Microscopical examination showed abundant lutein cells.

He believes it is best not to regard such tumors as benign and that as soon as cysts of the ovaries appear after a mole they should be removed, without regard to their character and whether or not there is any evidence of chorio-epithelioma.

Weibel: Operative Technique and Results in Carcinoma of the Uterus (Operationstechnik und Resultate bei Uteruscarcinom). *Tr. Internat. Med. Cong.*, Lond., 1913, Aug.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Weibel reports the results of 15 years' experience with 800 operations for carcinoma. Wertheim's Clinic shows permanent recovery, after 5 years or more, in 42.5 per cent of all cases operated on for carcinoma of the cervix, and if those who died during the operation are excluded, 53.5 per cent; of all cases that came to the hospital, including inoperable ones, they can show absolute recovery in 20 per cent. To show the actual results for different operators and different operations the percentage of recoveries, not only among all cases operated on, but among those surviving the operation, should be given. In this respect the author's statistics differ from others;

he is opposed to too great an extension of the field of operation, as he has always been, especially as regards the ureter embedded in a carcinoma. In such cases, he prefers to free the ureter from adhesions rather than to remove it for excision, as the latter has shown some very bad after-results.

Carcinoma of the body of the uterus is much rarer and less malignant than that of the cervix; the parametrium is almost never affected, though the pelvic glands are carcinomatous in 16 per cent of the cases operated on; however, the inguinal glands are seldom involved. From this he concludes that operation should always be through the abdomen, the vaginal route being chosen only when there is an absolute contra-indication for laparotomy. Myoma and carcinoma of the body of the uterus are frequently associated, and in 2 per cent of all cases operated on for myoma he found carcinoma of the body, and in 19 per cent of cases operated on for the latter condition he found myoma — this fact is significant in radiographical treatment. Metastases in the tubes and ovaries are frequent and furnish another reason for choosing the abdominal route.

With regard to the recurrence of carcinoma after more than five years, Weibel has obtained the following results: Of 169 cases, 13, or 7.7 per cent, had carcinoma again after 6 to 7 years; one had a sarcoma. Among the 13 cases of carcinoma there was one cancer of the duodenum, one of the breast, and one of the clitoris. The microscopical pictures of these three carcinomata were so different from the pictures of the original carcinomata of the uterus that they can hardly be called recurrences. The remaining 10 cases — 6 per cent — were undoubted recurrences in the wall of the pelvis; there was no recurrence later than the seventh year. The percentage of recurrences lessens considerably and quite steadily from the first to the fourth year, and remains constant for carcinoma of the cervix from the fourth to the seventh year. In carcinoma of the body there was no recurrence after the fourth year. The author believes, therefore, that for cervical carcinoma the period must be extended to 7 years before the cure can be considered permanent.

PROUST, of Paris, discussed some points in the technique of abdominal hysterectomy, particularly after ligation of the hypogastric arteries and their topography.

FAURE, of Paris, gave statistics from his private practice as to the results of the more radical total abdominal extirpation which he has been using exclusively for 17 years. Of 24 cases operated on, 2, or 8.33 per cent, died as a result of the operation; 5, or 20.83 per cent, of recurrence; in 17, or 70.83 per cent, there was recovery. In 13 of these cases the time elapsed since operation is from 20 months to six and one-half years. He believes that radium has a considerable effect on carcinoma, but that it should never be used in place of operation; only post-operatively to avoid recurrence.

BERKELEY, of London, gave the following statistics of his operations: 63 per cent of his cases were

operable, there being 22.5 per cent primary mortality after the operation; 32.4 per cent recurrences; and 25.4 per cent absolute recoveries.

CHILDE, of Southsea, discussed some points in the technique of extirpation of the cancerous uterus, which he considered important. He laid special stress on the preliminary curettage or cauterization of the coats of the tumor. He has constructed a special clamp for clamping the parametrium.

PUJOL Y BRULL, of Barcelona, always uses abdominal total extirpation by Wertheim's method, and has obtained good results in seemingly hopeless cases. He puts sounds in the ureters during the operation. In all cases that recovered he has found large numbers of eosinophile cells in the tumors.

RECASENS, of Madrid, prefers the abdominal method and the most extensive field possible. He believes that vaginal hysterectomy should be used only in the very earliest cases.

DICKINSON, of Brooklyn, referred briefly to what he had said in the report of his method concerning the two suture ligatures in hysterectomy.

Sugi, K.: *Lipoids in the Human Uterus* (Über die Lipide im menschlichen Uterus). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxii, 787.
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author examined 104 uteri for lipid substances, also for the fat content in the epithelium, mucosa, muscularis, and vessels. He found, especially in the mucosa and muscularis, but also in the blood-vessels, droplike formations belonging to the lipoids. These were present at all ages, but increased with age. In three pregnant uteri the fat content was not increased, but rather decreased, while in all cases of puerperal uterus there was a marked increase in the lipoids, which, moreover, showed double refraction. In myoma the fat content of the tumor was less than that in the parenchyma of the uterus. There were solid, ring-shaped, and sickle-shaped formations, mostly intracellular, and in the muscle-cells lying near the poles. In eleven cases of different ages the author tried, with various staining methods and microchemical reactions, to determine the lipoids of the mucosa and muscularis more accurately. Pigment could not be demonstrated anywhere; in the pregnant uteri there were some lipoids in the mucosa that were soluble with difficulty; no closer identification was possible, so the author believes that there were no pure lipid substances. The appearance of lipoids is the result of depressed vital function of the cells.

RITTERSHAUS.

Weiss, E. A.: *Some Diagnostic Errors in Differentiating Lesions of the Cervix*. *Penn. M. J.*, 1914, xvii, 301.
By Surg., Gynec. & Obst.

In reviewing the work of the Cancer Commission of the Pennsylvania Medical Society, the author states that the society has decided to continue its work along the educational lines as heretofore, and to this end it has enlisted the coöperation of the

universities, nurses' training schools, and the county medical societies in the work.

As the early signs and symptoms of cervical cancer are so few, the commission recommends that a thorough examination be made of the part, and if any doubt exists, that the patient be kept under observation and repeatedly examined. Whenever there is bleeding and a watery discharge, cancer should be thought of. While the causes of uterine bleeding and discharge are many and often transient, they state with all positive emphasis that any irregular bleeding or suspicious discharge should, under no circumstances, be treated without making a careful digital examination. In doubtful cases a microscopical examination should be made of a small piece of the tissue.

Acuminate condylomata, erosion of the cervix, and chancroids have been mistaken for the condition. In conclusion the Commission recommends that every married woman over forty years of age be examined at least once a year if not oftener.

EDWARD L. CORNELL.

Hitschmann, F., and Adler, L.: *Study of the Normal and Inflamed Uterine Mucosa; Endometritis, with Special Reference to Irregular Hæmorrhage from the Uterus* (Ein weiterer Beitrag zur Kenntnis der normalen und entzündeten Uterusmucosa. Die Klinik der Endometritis mit besonderer Berücksichtigung der unregelmässigen Gebärmutterblutungen). *Arch. f. Gynäk.*, 1913, c, 233.
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

While recognizing glandular hyperplasia of the mucosa, the authors maintain that it is only an interstitial form of inflammation of the mucous membrane of the uterus, characterized by infiltration, particularly with plasma-cells. They maintain, in spite of all objections, the correctness of their findings as to the cyclical changes in the normally menstruating woman. Abnormal changes in the mucous membrane are found as follows:

1. Where the period begins regularly but lasts an abnormally long time. In such cases, in the post-menstrual period, small, collapsed glands are found, in jagged rather than straight lines, with an epithelium of several layers.

2. In irregular menstruation there is a change in the mucous membrane, but it does not show the normal phases. The forms of glands characteristic of different phases are found together, as a result of pathological function of the ovary.

Discharge is the only one of the trio of symptoms of endometritis, hæmorrhage, pain, and discharge, that is present. It is not possible by curettage to so influence the re-formation of a hyperplastic mucosa rich in glands that it will be less abundantly provided with glands. The abundance of glands in a mucosa is not the cause of the hæmorrhage, therefore the curettage of such a mucosa for bleeding is just as likely to fail as to succeed. Interstitial inflammation of the mucosa does not lead to hæmorrhage, the hæmorrhage being due to a simultaneous inflammation of the ovary.

The authors maintain that changes in the function of the ovary also cause bleeding in retroflexion, metritis, and myoma. They do not admit local causes for hæmorrhage, with the exception of mechanical irritations, polyps, submucous tumors, etc.

From their own and other authors' work they conclude: (1) Curettage can no longer be regarded as anything more than a symptomatic treatment. (2) There is still some doubt as to whether hæmorrhage is caused by anatomical or functional changes in the ovaries. (3) Pain in endometritis indicates that the inflammation has passed beyond the boundaries of the uterus. (4) Only a purulent discharge is a sign of chronic endometritis. They deny the value of curettage for discharge in endometritis, except in post-abortion cases. They are doubtful as to the good results of caustic treatment, and say that the radical treatment of purulent discharge is as yet an unsolved question.

ASCHHEIM.

Jaschke, R. T.: Symptom-Complex of the Climacteric and Its Relation to General Medicine (Der klimakterische Symptomenkomplex in seinem Beziehungen zur Gesamtmedizin). *Prakt. Ergebn. d. Geburtsh. u. Gynäk.*, 1913, v, 275.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Under the climacteric symptom-complex the author includes all local and general changes in the organism that take place at the period of transition from the age of sexual activity to that of sexual rest. He does not draw any distinction between normal and pathological conditions.

The beginning of the menopause is not the critical point, for climacteric symptoms may exist for years either before or after this. The modern opinion is that endometritis has very little to do with the so-called climacteric hæmorrhage, and in many cases there are no demonstrable changes in the genital organs. Arteriosclerosis is doubtless of great importance, but according to Pankow's investigations no casual relationship has been established.

The author uses the term metropathia hæmorrhagica climacterica only in cases where there are no demonstrable anatomical-pathological changes, and attributes them to disturbances in internal secretion. He passes over the changes in the genital organs themselves and discusses conditions in the different organic systems so exhaustively that the work is not suitable for a brief extract. His discussions of the heart and blood-vessels, metabolism, and the nervous system are especially important.

In conclusion, the author endeavors to give the etiology of the different symptoms and also gives a number of valuable points in regard to internal secretion. The gradual disappearance of the ovarian hormone causes a disturbance of function in the whole system of ductless glands, which persists until a new balance is established. If there was already any abnormality in the function of any of the other ductless glands, the condition is complicated, the disturbances are greater, and the establishment of a balance takes a longer time. The

question is complicated by the fact that the secretion of one ductless gland increases certain functions of the other glands, while it inhibits certain other functions.

RUHEMANN.

Mayer, E.: The Intranasal Treatment of Dysmenorrhœa; with a Report of Ninety-Three Cases. *J. Am. M. Ass.*, 1914, lxii, 6.

By Surg., Gynec. & Obst.

Mayer reports 93 cases of dysmenorrhœa which were treated intranasally. Abnormal conditions of the nose were removed when present, otherwise the spots of Fliess in the nasal mucosa, which Fliess terms "genital spots," which showed tumefaction and engorgement, were cauterized either with the electrocautery or with trichloracetic acid. The latter applied four times to the genital spots at intervals between menstrual periods is usually sufficient to obtain lasting results. The symptom-complex of premenstrual headache, nausea, and colic at the onset of the flow, was completely relieved.

Of the 93 patients, 12 did not report, leaving a total of 81 cases reported on: 19 were not relieved; 14 were improved, and 48 were cured; i. e., 60 per cent cured and 75 per cent benefited.

HENRY SCHMITZ.

Dean, J. M.: Operative Procedure in the Treatment of Uterine Displacement. *J. Mo. St. M. Ass.*, 1914, x, 238.

By Surg., Gynec. & Obst.

Dean discusses operative procedures employed in correcting retroversion and prolapsus uteri. He first takes up the normal anatomical position of the organ and its relations, then discusses the relative uses of the Kelley, Mills, Baldy, Gillian, and Alexander-Adams operations for retroversion. He advocates the Watkins-Wertheim operation for prolapsus.

Dean thinks prolapse in tumors of the uterus is best treated by abdominal section, and transplanting the cervical stump between the recti muscles, as advised by Kocher. For prolapse of the vaginal walls following hysterectomy he advocates vaginotomy.

EUGENE CARY.

Donaldson, H. R.: A Few Remarks on Uterine Prolapse. *J. M. Ass. Ga.*, 1914, iii, 302.

By Surg., Gynec. & Obst.

The author pleads for more careful work in the after-treatment of obstetrics. His conclusions on the subject are as follows:

1. A hypodermic of morphine and atropine is recommended during the first stage in primiparæ but he is opposed to its use in other stages and in multiparæ.

2. The membranes should not be ruptured too early; in fact, unless there is some special indication they should not be ruptured until the bag of water presents at the vulva.

3. When forceps delivery is necessary there should be a more cautious and deliberate use of instruments than is frequently the case. A change

from long to short forceps in completing a mid-forceps delivery is recommended.

4. When a laceration occurs, a careful, painstaking, aseptic repair should be done.

5. The patient should be cautioned against lying on her back during the entire confinement period, as this position encourages retroflexion, which is usually the first step in prolapse.

6. The use of a tight abdominal binder, which also encourages retroflexion should be forbidden.

7. A primipara should be kept in bed for one month and a multipara at least three weeks.

8. For a period of at least six weeks after the patient is allowed to leave her bed she should be free from any unusual exertion, standing upon her feet for any considerable length of time or the performance of any social duties whatever.

9. An examination of the mother should be made in about two months after labor, to ascertain the condition and position of the pelvic organs, especially with regard to a lacerated cervix and whatever treatment may be found necessary should be promptly resorted to.

EDWARD L. CORNELL.

Byford, H. T.: Choice of Operations for Retroversion when the Abdominal Cavity is Opened. *Chicago M. Recorder*, 1914, xxvi, 1.

By Surg., Gynec. & Obst.

The author considers the Alexander operation for shortening the round ligament to be theoretically and practically the best, but when the peritoneal cavity must be opened, he operates as follows:

The ligament is grasped near its exit from the internal inguinal ring and pulled towards the median line until it is taut. A slender 20-day catgut thread is passed through it about a centimeter from the internal ring and again about five centimeters from its uterine attachment, and tied. The edges of the resulting loop of ligament are sewed so as to form a double cord, the end of the thread being left projecting beyond its free end. The peritoneum is separated freely from the abdominal wall at the lower end of the incision laterally as far as the internal inguinal ring. With the point of a pair of slightly curved hæmostatic forceps the peritoneum is punctured, from without inward about a centimeter mesially from the ring, the thread is grasped and the loop is pulled through the puncture until all of the sutures are extraperitoneal. With a permanent suture the loop is attached at a point about a centimeter from its base to the under surface of the abdominal wall as near the inner ring and as low down as possible without risk of puncturing the epigastric or femoral artery. The pulsating arteries are easily felt, and each step of the operation should be guided both by sight and touch. The loop is twisted half-way around on its long axis and sewed with catgut along the abdominal wall toward the median line. The same is done on the opposite side with the other ligament and the abdomen is closed in the usual way. A small pessary is introduced to be worn for two or three months. EUGENE CARY.

Rissmann, P.: One Hundred Cases of Ventrofixation of the Round Ligament by the Author's Own Method; and 100 Alexander-Adams' Operations with Buried Silk-Sutures, Without any Recurrence (Über 100 Ventrofixuren der Ligg. rotunda nach eigener Methode und über 100 Operationen nach Alexander-Adams mit prinzipieller Versenkung von Seidenfäden ohne Rezidiv). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxiii, 696.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Rissmann's method consists in the fixation of the round ligament, cut 5 cm. from the uterine end, to the abdominal wall with three silk-sutures, using Pfannenstiel's transverse incision of the fascia and spinal anæsthesia. He thinks it is important to use silk rather than catgut. He has never seen any of the bad results that are commonly feared from buried silk-sutures. His results with this method have been favorable; he had only one death from extensive adhesions. He never had symptoms of ileus, and secondary hernia only once. Pregnancy and labor occurred in 17 cases without complications of any consequence. The indication for Alexander-Adams' operation seems to him to lie in the possibility of correcting abnormal positions under spinal anæsthesia. A modification of this operation suggested by Rissmann is the superimposing of the fascia. He had 100 cases without recurrence or hernia.

R. KÖHLER.

Sigwart, W.: Suture of the Great Pelvic Vessels in the Abdominal Radical Operation (Über die Naht der grossen Beckengefäße bei der abdominalen Radikaloperation). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxiv, 374.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Since the first abdominal extirpation of the uterus for carcinoma by Freund, in 1878, we have learned, after splitting the broad ligament (Bumm, 1905), to lay bare all the pelvic vessels from the point of bifurcation of the iliac to the obturator and the superior vesical, and to avoid them as much as possible in cleaning out the parametrium and removing the glands. If injury does occur the resulting hæmorrhage may be controlled not only by ligation, but by suturing the vessels.

Bundles of carcinomatous glands are likely to be adherent to the walls of the veins, and so it is often difficult to avoid injuring the hypogastric vessels and the external iliac vein, though the external iliac artery can almost always be avoided. A ligation of the hypogastric, or even of the common iliac vein itself, need not cause a long continued insufficiency of the venous outflow from the pelvis, because of the formation of collaterals to the external iliac vein as well as to the vena cava through the vertebral veins.

The ligation of the hypogastric artery also has no serious consequences, while the superior vesical artery should always be spared if possible in ligating the uterine artery, for fear of interfering with the nutrition of the bladder wall. The external iliac vein is frequently the seat of large packets of glands,

but the danger of gangrene of the leg from ligating it was greatly exaggerated by Braun (1871) and Toldt (1897); according to Wolff, ligation of this vein led to gangrene of the leg in only 5 per cent of the cases.

Braun and Müller have shown that with sufficient arterial pressure a venous collateral circulation is almost always created through the obturator and gluteal veins and the subcutaneous veins on the posterior superior part of the leg, yet in injury to the iliac vein suture should always be undertaken. This may offer great technical difficulties, if the patient is a corpulent woman and the vessels lie deep down in the pelvis, or if vessel is injured, not on its broad upper surface but on one side.

SULZER.

ADNEXAL AND PERIUTERINE CONDITIONS

Dannreuther, W. T.: Corpus Luteum Organotherapy in Clinical Practice; with Report of a Case of Bilateral Salpingo-Oöphorectomy in which the Administration of Corpus Luteum Extract Was Followed by the Reestablishment of Menstruation. *J. Am. M. Ass.*, 1914, lxii, 359.
By Surg., Gynec. & Obst.

The internal secretion of the ovary is derived from the corpus luteum, hence extracts of the latter and not of the entire ovary, should be employed. Among the therapeutic indications, ovarian disturbance and inhibition of its function are common to all, otherwise the use of the extract is nullified. The accessory symptoms following the administration of the freshly desiccated corpus luteum as laid down by Burnam are adhered to and additional accessory symptoms enumerated, e. g., the extract must be obtained from ovaries of pregnant animals only; constant supervision of blood-pressure is necessary, a fall of 15 mm. Hg. prohibiting further use. Five grs. of the desiccated extract are equivalent to 30 grs. of the fresh yellow body, and constitute a dose to be given three times daily; 10 grs. t.i.d. are rarely necessary. If indicated, it may be used in amenorrhœa of early menstrual life; ovarian dysmenorrhœa; symptoms of climacterium; sterility in absence of any pathological conditions in the pelvis; and hyperemesis of early pregnancy.

The author reports a case in which menstruation became reestablished by corpus luteum extract after bilateral salpingo-oöphorectomy; subjective symptoms of a premature menopause were entirely absent.

HENRY SCHMITZ.

Hirsch, J.: Treatment of Disturbances of the Internal Secretion of the Ovary with Glanduovin (Über die Behandlung von Störungen der inneren Sekretion der Ovarien mit Glanduovin). *Berl. klin. Wchnschr.*, 1913, l, 1810.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author used a special extract of the ovary, called glanduovin, which he prepared. From his

practical experience with this remedy he believes that the symptoms of either the premature or normal climacteric can be favorably influenced by it. He treated 25 cases successfully and 3 unsuccessfully. Dysmenorrhœa due to hypofunction of the ovaries was cured by glanduovin in 32 out of 37 cases. In oligomenorrhœa and amenorrhœa he reports only one failure in 16 cases; one case out of two of dermatosis during pregnancy was favorably affected; the results were doubtful in pruritus vulvæ in pregnant and non-pregnant women; hyperemesis gravidarum was improved in 9 cases out of 19. The injections were repeated daily until results were obtained, two to four injections generally sufficing. The author believes the effect is due to the fact that the giving of hormones stimulates an increased production of hormones in the body.

RUNGE.

Schickele, G.: The Influence of the Ovaries on the Growth of the Breasts; a Study of Internal Secretion (Der Einfluss der Ovarien auf das Wachstum der Brustdrüsen. Beiträge zur Lehre der inneren Sekretion). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxiv, 332.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Schickele reports cases of swelling of the breasts in new-born girls; of foetal menstruation; of breast development in little girls, in different classes of society; of swelling of the breasts during menstruation and of bloody discharge from them; and a case of menstruation during pregnancy. He also reports cases showing the influence of castration on the development and secretion of the mammary glands; atrophy of the glands after castration; and tells of his own and other authors' animal experiments with extracts of the corpus luteum, placenta, and testicles. He also tells of his experience in regard to myometrial glands, the possibility of developing milk secretion in the breasts of a primipara by placing an infant at her breast near the end of pregnancy; the swelling of the breasts after castration; and the symptoms of the menopause. He says that the influence of the ovary and, in many respects, of the corpus luteum on the growth of the mammary gland should be determined as far as possible; it is probable that other glands with internal secretion have a vicarious effect, but this needs further proof.

HOFSTÄTTER.

Valardo, F. R.: Experimental Research on Changes in the Ovary from Repeated Injections of Adrenalin (Experimentelle Untersuchungen über Eierstockveränderungen infolge wiederholter Adrenalineinspritzungen). *Zentralbl. f. Gynäk.*, 1913, xxxvii, 1350.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The many contradictions in the results of experiments regarding the functional relation between the ovaries and the suprarenal glands led the author to study, experimentally, the effect on the ovaries of female dogs of subcutaneous injection of adrenalin. He used normal, pregnant, and castrated dogs, and found that there was a perceptible decrease in

the size of the ovary, and on microscopical examination this was found to be due to degenerative processes in the specific glandular parenchyma. There was a marked increase in the resistance of the animal to adrenalin poisoning during pregnancy, while that of the castrated animal was noticeably decreased. Therefore, there must be an antagonism between the cortical substance of the suprarenal gland and that of the ovary.

HARF.

Evler: Autoserotherapy, in a Case of Malignant Papillary Cyst of the Ovary (Autoserotherapie bei einem Fall von malignem papillärem Ovarialcystom). *Berl. klin. Wchnschr.*, 1913, I, 2008.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Evler operated three years ago on a patient with a malignant cystoma that could not be removed radically on account of extensive adhesions. After emptying out about ten liters of a turbid fluid the cyst still contained about 4 liters; accordingly, a small opening was made and the cyst sutured into the subcutaneous connective tissue so that the contents would be poured out into this tissue. In the course of the following three years the patient had to be punctured three times, but her general condition, which was very bad before the operation, improved to a marked degree.

ZINSSER.

Kosmak, G. W.: The Rôle of Ovarian Disease in the Production of Sterility. *N. Y. St. J. Med.*, 1913, xiii, 638.

By Surg., Gynec. & Obst.

In this preliminary contribution to the study of the rôle of ovarian disease in the production of sterility Kosmak has drawn some tentative conclusions based on an analysis of 45 cases of his own and other surgeons. He believes we have much to learn of the physiology, pathology, and treatment of sterility in women. Though malformations and malpositions are important among the causative factors, he believes their importance has been overestimated.

As to ovulation he says, "In respect to the time at which it takes place in relation to the menstrual periods we are still more or less in ignorance, and whether each menstrual period is necessarily accompanied by the discharge of an ovum cannot be stated conclusively. It is presumed a follicle ruptures at each period, but whether this occurs in each ovary alternately has not as yet been demonstrated, nor do we know whether successive follicles ripen and rupture during successive months in a healthy ovary when the other is diseased. The only presumptive evidence pointing to this fact is that in the presence of a cystic ovary which does not functionate, menstruation and apparently ovulation go on regularly."

He has further been impressed with the idea that although the menstrual function is apparently not inhibited in such cases, a follicle does not always rupture on each occasion, for in many instances where such disease of the ovary is present, sterility is a frequent accompaniment.

He has been led to believe that marked cystic degeneration of the ovaries is the central and important factor in the production of sterility in certain instances, and he thinks it probable that the irritation and disturbance produced by the presence of such a condition would act as a bar to fertilization.

The author's conclusions are that the question of sterility in an otherwise healthy woman must depend on an aggregation of factors and that the entire pelvic contents must be subjected to careful study. In a certain proportion of cases, however, removal of a diseased ovary undoubtedly contributes to increased function in the other, as evidenced by improved menses and the greater possibility of subsequent pregnancies.

It would appear that sex is not dependent on the side from which the individual ovum is derived and that whether the left or right is removed the proportion of sexes in subsequent children is about equal.

E. A. BULLARD

Daude, O.: Sterility in Women; and Its Treatment by Baths (Über die weibliche Sterilität und ihre Bäderbehandlung). *Fortschr. d. Med.*, 1913, xxxi, 1072.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author discusses first the general and local causes of sterility and considers cases caused by anæmia and chlorosis, gout, diabetes, and chronic intoxications as suitable for bath treatment. Of those due to local gynecological causes, balneotherapy can be used in mild degrees of infantilism, hyperæsthesia of the genital organs, and especially in chronic inflammatory processes in the uterus and adnexa. The baths that have the most extensive use are the carbonic acid chalybeate baths, which are recommended in almost all cases and which can be combined with massage and other physical methods of treatment. Brine baths, sometimes combined with the carbonic acid chalybeate ones, can be used in inflammatory processes, but they are to be avoided in states of excitement. In such conditions the author prefers mud baths at 36 to 38 degrees, which have a quieting effect. Besides full baths, sitz baths, sponge baths, and packs are recommended.

RUHEMANN.

Reynolds, E.: The Principles Underlying the Successful Treatment of Sterility in Women.

N. Y. St. J. Med., 1914, xiv, 4.

By Surg., Gynec. & Obst.

Reynolds divides the sterilities he proposes to consider into the three following classes: (1) Those due to persistence of underdeveloped or infantile organs; (2) those due to altered conditions in the secretions of the genital tract; and (3) those due to failures of ovulation.

He dismisses the first group with the brief statement that "except for the renewed development which sometimes follows early marriage, they are hopeless and no treatment can be recommended." The second and third groups are discussed at length.

Very slight changes in the genital secretions are enough to incapacitate the spermatozoa: acidity, fermentation, and pus in the secretions are fatal to its normal action. Increased viscosity of the vaginal or cervical mucus or abnormal rapidity of the current are unquestionably the cause of sterility in many cases. All or any of these preventive factors may and often do produce sterility in women having no symptoms of ill health.

The author believes there are at least two conditions of the ovary which inhibit ovulation and are usually remediable; viz., (1) persistent corpus luteum and (2) distention of the ovary by retention cysts, usually with thickening of its capsule.

As to the former, the author recalls 7 cases in which large persistent corpora lutea were found and excised and in every case the operation was followed by the prompt appearance of pregnancy in a previously sterile woman. Frank, Loeb, Marshall, Jolly, and others have made extensive studies of the corpus luteum, and Reynolds believes the consensus of opinion is that the presence of the corpus luteum inhibits pregnancy. This fact has long been recognized in the breeding of cattle and the removal of the corpus luteum is a standard and successful practice.

Concerning ovaries distended by retention cysts and with thick capsules, the author believes they seldom ovulate; at any rate they seldom contain corpora lutea. Though it might seem probable that enlargement would recur after removal of these cysts, the fact is that in Reynolds' experience such has rarely been the case and he believes this operative procedure has added largely to his success in the treatment of sterility.

When the cause for hostile secretions is to be found in general conditions, such as hyperacidity, produced by eating too much table salt, or by other forms of general acidosis, the remedy is found in general medical treatment. When the hostile secretion is the result of any of the many forms of comparative misuse of sexual instincts these habits must be set straight. Both purulence and hyperacidity may be bacterial and both indicate disinfection, and this must cover every crypt and fold of the vagina. Insufflation with powdered protargol with the patient in the knee-chest position is the most efficient. Douching is ineffective. Obstruction in the cervical canal and antelexion often need correction.

If examination under anæsthesia shows enlargement of both ovaries of even small degree or palpability of even one tube, it is probable that abdominal incision will be necessary. The author believes a few such cases may be relieved by suitable dissection of the posterior lip of the cervix and division of the anterior attachments of the cervix, thus gradually helping conditions by improving drainage.

The technique of removing a persistent corpus luteum is simple, consisting of expression of the corpus and suture of its base after trimming the

edges. The treatment of retention cysts varies with their number, size, and location.

The keynote to the whole subject of the treatment of sterility seems to the author to lie in a recognition of the fact that fertility is dependent on an extreme normality, in so far as the physiological potency of the canal is concerned—a normality so extreme as to require great closeness of observation, if the slight alterations which are sufficient to upset it are to be diagnosed.

E. A. BULLARD.

Schottmüller, H., and Barfuth, W.: Etiology of Purulent Disease of the Adnexa (Zur Ätiologie der eitrigen Adnexerkrankungen). *Beitr. z. klin. d. Infektionskr., u. z. Immunitätsforsch.*, 1913, ii, 45. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Because of the extreme pathogenicity shown by anaërobic micro-organisms in puerperal fever after delivery and abortion, the authors attempted to determine how frequently these bacteria cause local purulent diseases of the female genitalia. They examined 89 cases bacteriologically, removing the pus with a sterile syringe and making cultures for aerobic and anaërobic bacteria. Statistics are given showing that the number of cases of disease of the adnexa caused by anaërobic bacteria is considerable, and that the number of cases of salpingitis caused by gonococci is much lower than has hitherto been thought.

Clinically, the anaërobic bacteria are of interest because it is they and the colon bacilli that give the pus its fetid odor. The authors believe that the infection takes place, not from the intestine, but from the endometrium. In a great number of cases they succeeded in finding the same anaërobic bacteria in the endometrium as in the pus from the tubes. The reason they could not always do this they think is because the germs in the cervical canal had already disappeared or been overgrown with other forms before suppuration began in the tube. They exclude infection from the blood, although in some cases the same bacteria were found in the blood as in the pus. Delivery, abortion, and especially criminal operations predispose to the infection. In some cases of cervical gonorrhœa the authors found, not gonococci, but anaërobic bacteria, in the pus from the tubes; they think that this was not necessarily due to secondary infection.

Pure gonococcal infection of the tube shows the best prognosis, for gonococci soon die in the pus. There are no certain means of differential diagnosis between septic and gonorrhœal processes. To determine the question of etiology, they think bacteriological examination of the pus in a great number of cases is necessary. The treatment is almost entirely conservative. Vaginal puncture and the use of Perthe's aspiration apparatus decrease the duration of the disease. Leucocyte counts should be made, and when the pus is sufficiently evacuated the leucocyte count, which has been high, sinks. The average duration of treatment was 40 days.

MARKUS.

Mussatow, N. A.: Treatment of Chronic Gonorrhoeal Salpingo-oöphoritis by Intra-Uterine Injections of Argentamine (Zur Frage über die Behandlung der chronischen gonorrhoeischen Salpingo-oöphoritiden durch intrauterine Injektionen von Argentamin). *Zentralbl. f. Gynäk.*, 1913, xxxvii, 1470.

By *Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.*

The author reports the results of the treatment of chronic inflammations of the adnexa with intra-uterine injections of 2 per cent argentamine. Of 17 cases treated from December 16, 1911, to April 1, 1912, 5 were pyosalpinx and 12 double salpingo-oöphorectomy. Of the 5 cases of pyosalpinx there was subjective recovery in all cases, no pain on coitus and return of the orgasm; objective recovery in 3 cases. Of the 12 cases of salpingo-oöphoritis there was objective recovery in 11. From April, 1912, to June, 1913, 128 cases were treated with similar good results.

The treatment causes an active hyperæmia of the whole genital system. Normal menses are often increased, slight ones are not affected. The results were excellent in Zweifel's cases also, only 5.5 per cent of them being operated on, even including old cases with severe adhesions. Even cases that had previously had one or both tubes removed by laparotomy were markedly improved. MERTENS.

EXTERNAL GENITALIA

Pozonyi, E.: A Case of Primary Carcinoma of the Vagina Operated Upon by the Dorsoperineal Route (Über einen dorsoperineal operierten Fall von primärem Scheidenkrebs). *Gynäk. Rundschau*, 1913, vii, 661.

By *Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.*

The author describes the case of a forty-year-old woman, a VI-para, with two abortions. For a year she had had a foul-smelling discharge, with no pain, but accompanied by emaciation. On examination, a nodular bleeding tumor was found in the upper two-thirds of the posterior vaginal wall. There was extensive infiltration of the rectovaginal septum. Microscopical examination showed a basal-celled carcinoma. The entire genital apparatus and the rectum were removed by the dorsoperineal route; the rectum was amputated far above the rectal fold—the sphincter could not be spared because of the infiltration; drainage to the peritoneum was established in front of the sigmoid colon; and a sacral anus was formed. Six months later there had been no recurrence and the patient's weight had increased 10 kilograms. Because of the connection between the lymphatics of the posterior vaginal wall and those of the rectum, when cancer occurs in the vagina all of the genital organs and the rectum should be removed. GRÜNBAUM.

Hedén, K.: Colloidal Sulphur in Treatment of Gonorrhoea (Über kolloidalen Schwefel gegen Gonorrhoe). *Dermatol. Wchnschr.*, 1913, lvii, 1003.

By *Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.*

The author used colloidal sulphur in treating 10 cases of gonorrhoea in women. The treatment con-

sisted of irrigation of the urethra twice a day with a one to two per cent solution; the cervix is touched twice a day with a 10 per cent solution and in cases of involvement of the vulvo-vaginal glands, a 4 per cent solution is injected into them. In irrigation of the bladder there was often severe pain. The treatment of gonorrhoea of the uterus often had to be given up because of irritation. The bactericidal effect is considerable, but not so great as that of the albumin-silver combinations. BLANCK.

MISCELLANEOUS

Schickele, G.: The Nervous Symptoms of the Normal and Premature Menopause and Their Relation to Internal Secretion (Die nervösen Ausfallserscheinungen der normalen und frühzeitigen Menopause in ihren Beziehungen zur inneren Sekretion). *Handb. d. Neurol.*, 1913, iv, 434.

By *Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.*

Schickele reviews all that is known on this subject, and while he gives his own opinions he also sets forth those of all other authorities. He regards these variable symptoms as toxic, caused by over-secretion of the glands antagonistic to the ovaries. Since the ovaries unquestionably have the property of decreasing blood-pressure, a rise in blood-pressure would naturally take place after they cease to function, and this can actually be observed in most cases. The degree of this increase, however, is not in proportion to the severity of the disturbance. The fact that rise in blood-pressure and symptoms of the menopause do not always appear is explained by the fact that other glands take over the function of the ovary; of course, constitutional differences in individuals also have their effect. The details of this interesting work must be read in the original. Therapeutically he recommends ovarian extract, and is skeptical as to the value of implantation of a foreign healthy ovary, and also of autoplasmic transplantation. SEIGE.

Clark, J. G., and Keene, F. E.: The Relationship Between the Urinary System and Diseases of the Female Pelvic Organs. *Surg., Gynec., & Obst.*, 1914, xviii, 10. By Surg., Gynec. & Obst.

Symptoms referable to impaired bladder function play an important rôle in the clinical history of many pathological conditions of the female pelvic organs. Because of its intimate relationship with the surrounding genitalia, the bladder frequently participates in the adjacent pathology, whether this be in the form of neoplasm, infection, or displacement.

The influence of pelvic pathology is by no means limited to the bladder, but may directly affect the ureters and kidneys, the resulting lesions being due to mechanical blockage or infection. On the other hand, disease of the urinary system may exist coincidentally with that of the genital tract, the one being entirely independent of the other, so far as etiology is concerned. Hasty and inaccurate methods of examination may prompt the correction

of some minor gynecological abnormality, when the lesion productive of symptoms lies solely in the kidney or ureter, hence lesions of the urinary system may occur either as sequelæ or complications of disease of the female pelvic organs; it is important to determine their exact nature before resorting to operation.

The solution of this problem cannot be gained from dependence upon symptoms alone; whether the disease be primarily of the kidney or of the pelvic organs, the subjective manifestations common to both are often limited to vesical symptoms. The relationship of the one to the other can be determined only by a thorough examination of the bladder, ureters, and kidneys. A routine cystoscopical examination in all cases presenting vesical disturbances, irrespective of the coincident pelvic pathology, should be an invariable rule.

Duffek: Fæcal Tumor (Kottumor). *Zentralbl. f. Gynäk.*, 1913, xxxvii, 1291.

By *Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.*

A tumor the size of a man's head had been gradually developing for six months in an unmarried woman of 33 with serious anomalies in the skeleton from an old fibrous osteitis. A diagnosis of malignant tumor was made, and as the patient was rapidly growing worse, laparotomy was performed. The tumor was found to be an enormously dilated sigmoid flexure filled with masses of fæces and the small intestine was found to be very much contracted. Because of the bad condition of the patient the flexure was brought forward and as much of the fæces as possible removed through a lengthwise incision; the intestine was sutured in three layers; and the abdomen closed. After 36 hours there were signs of irritation of the peritoneum and the formation of new tumors; therefore the abdomen was opened again, and the upper Lambert suture was found to be covered with a slimy substance. This segment of the flexure was drawn forward and, the next day, was opened with the thermocautery and several masses of fæces removed. After that the intestine began to function and the patient gradually recovered. In this case the megacolon was caused by the extreme heart-shaped narrowing of the pelvic inlet, 2 cm. being the longest diameter. Fifteen years' sickness had caused chronic constipation.

There were three possibilities in the way of operation on this case, viz: (1) Incision, primary suture of the intestine, closure of the laparotomy wound. (2) Resection of the large intestine. (3) Formation of an artificial anus. The operation of choice would have been resection of the colon and chiseling off of the promontory, but this was impossible on account of the patient's condition. **RUHEMANN.**

Drueck, C. J.: Genital Fistulæ in the Female. *Med. Rec.*, 1914, lxxv, 15.

By Surg., Gynec. & Obst.

The author briefly discusses the question in all its phases. He recommends the following operation:

A flap one-quarter of an inch larger than the opening is marked off on one side with a knife. The vesicovaginal septum is split and the vaginal mucosa lifted, leaving the vesical wall and areolar tissue intact. This dissection is carried to within one-eighth of an inch of the fistulous edge, and the remaining tissue is used as a hinge to lay the flap over the opening like a patch. The size and shape of the flap must be determined in each case and must be large enough to cover the opening.

The next step is to split the vesicovaginal septum around the edge of the fistula opposite the side of the flap, thus making another flap beginning at the edge of the fistula and hinging about three-eighths to one-half inch back of the opening. To fasten the flaps in place, fine catgut is inserted about one-quarter of an inch from the edge, passed through the connective tissue deeply down to but not through the mucosa and curved back and out again on the same surface about one-eighth of an inch from the edge. Passing over to the vesical half of the flap of the opposite side, the needle is entered in the fresh cut surface, passed down to but not into the vesical mucous membrane, then turned and brought out again on the cut surface back in the angle of the wound. It provides a broad surface for approximation and lifts the wound edge above the level of the bladder wall.

The fistulous opening is then closed, but the flap of vaginal mucosa remains to be fastened. Fine catgut is then passed through the free edge of this flap, carried over the wound, and into the fresh surface on the opposite side, where it is passed into but not through the vaginal wall and brought out again on the vaginal surface. The stitches are placed about one-quarter of an inch apart. This second flap closes the vaginal wound and reinforces the flap which closes the fistula. The two rows of stitches are each in the line of axis of the vagina, but are not superimposed on each other. After the sutures are inserted but before they are tied the bladder should be thoroughly washed out. **EDWARD L. CORNELL.**

Kreuzfuchs, S.: Röntgen Treatment in Gynecology (Zur Frage der Röntgenbehandlung in der Gynäkologie). *Wien. med. Wchschr.*, 1913, lxiii, 1482. By *Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.*

The author calls attention to the good results obtained from röntgen treatment in menorrhagia and metrorrhagia. In treating myomata with röntgen rays it is of primary importance to exclude disease of the adnexa. The first effect of röntgen treatment is a marked improvement in the general condition. Often severe hæmorrhage recurs after a decrease in the hæmorrhage and the size of the tumor. From his experience, the author concludes that there is one substance in the ovary that affects the general health and is extremely sensitive to the röntgen rays, and another, that is less sensitive, that affects menstruation. In his opinion, the best time for the application of the rays is before the menstrual period. **BORELL.**

OBSTETRICS

PREGNANCY AND ITS COMPLICATIONS

Meyer, R.: Inflammation as a Cause of Ectopic Decidua or Pardecidua (Die Entzündung als Entstehungsursache ektopischer Decidua oder Pardecidua). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxiv, 250.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In a series of cases of ectopic formation of decidua, from the literature and from his own abundant material, Meyer shows that decidua formation outside the mucous membrane of the body of the uterus, as in the ovary, the ligament, the tube, the cervix, and in cervical polyps, as well as on the serous membrane of the pelvic peritoneum, intestine, and omentum, and in adenomyomata, and heterotopic epithelial inclosures, owes its origin to preceding inflammatory changes in the tissues, and that the effect of hormones on certain tissues under these circumstances becomes evident, where it would not otherwise take place.

ASCHHEIM.

Grusdeff, W. S.: Extra-Uterine Pregnancy (Einige Beobachtungen bezüglich der Extrauterin gravidität). *Prakt. Vrach*, 1913, xii, 483.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author gives his experience with this procedure in extra-uterine pregnancy also. He comes to the conclusion that a positive reaction is to be regarded practically as a chance symptom of pregnancy, which appears many times but is often absent.

He discusses bilateral extra-uterine pregnancy and gives the macroscopical and microscopical findings in an operation for it, in which both the tubes and the appendix, which was also involved, were removed. The right ended in a sack which contained a well-deformed placenta; there was a cone-shaped thickening in the isthmus of the left tube, which contained clots of blood. Microscopically, there was a marked difference between the two; in the right tube the villi were well preserved, while in the left they had lost their epithelium and consisted only of a stroma showing hyaline degeneration. In only one place were there a few well-preserved villi. A marked decidual reaction could be seen in the wall of the tube. It was a case of bilateral tubal pregnancy which had begun on both sides at the same time but had been interrupted sooner on the left.

The third question the author takes up is torsion of the gravid tube. A case operated on by him showed how the torsion of a hæmatosalpinx which had originated from an abortion and was improving under conservative treatment led to venous stasis and renewed bleeding in the lumen and wall of the tube. Rupture of the wall, which was already penetrated by villi, did not take place, because the

peritonitis that resulted from the torsion caused adhesions of the wall of the tube with the ovary and the anterior fold of the broad ligament. BRAUDE.

Duff, D.: Notes on a Case of Extra-Uterine Pregnancy in a Rudimentary Fallopian Tube. *Lancet*, Lond., 1914, clxxxii, 171.

By Surg., Gynec. & Obst.

The author reports a case demonstrating that fatal hæmorrhage may result from a small, apparently unimportant source of bleeding within the abdominal cavity. The patient when seen had for several hours had severe pain over the lower part of the abdomen and had passed her normal menstrual period by three days only. Her temperature was 97° F. and the pulse 110. Laparotomy disclosed a considerable quantity of free blood within the abdominal cavity. The right appendages were found to be absent and no trace of an ovary or tube could be found. On the left side a mass, rounded and fluctuant, was felt, and this at first was thought to be the gestation sac of an extra-uterine pregnancy. The tube, ovary, and blood-clot were removed and were subsequently examined, but nothing abnormal could be detected. The patient died about fifty hours after operation.

A post-mortem examination showed that the right ovary was absent and the right tube was represented by a thick fusiform stump set on the top of the right cornu rather than in the normal line of the tube, and the upper surface of this showed an area of blood-clot a quarter of an inch in diameter. This body appeared to be a tubal ovum. Microscopic sections of the thickening at the right cornu showed this to be a small deformed tube containing fragments of an early ovum — villi, plasmodial masses, and the characteristic wall of an early implantation cavity — obviously this was a case where the ovum had migrated from the left side. The cause of death was the hæmorrhage which took place from the small vessels in the wall of the malformed tube. At the operation the site of the hæmorrhage was not apparent. In a similar case, the gestation area should be excised with a wedge-shaped incision and the edges stitched together.

D. C. BALFOUR.

Butner, A. J.: Ectopic Pregnancy. *Illinois M. J.*, 1914, xxv, 24.

By Surg., Gynec. & Obst.

The etiology, frequency, and symptoms of tubal pregnancy are discussed from the author's viewpoint as observed by him while engaged in general practice, supplemented by findings of the operating room, laboratory, and autopsy, and based on conclusions from his personal observations together with a review of the literature on the subject.

He believes the primary etiological factor of tubal pregnancy is explained in the two early stages of embryonic development, viz., the morula and the blastula stages, and adds that the morula stage is normally required for tubal or extra-uterine existence, while the blastula stage is normally intended for intra-uterine existence only.

Butner states that ectyesis occurs much more frequently than is generally supposed by the average clinician, and that one engaged in a general practice, composed of all classes, ought to see and recognize at least one ectopic pregnancy in every one hundred conceptions coming under his observation.

Five cases are reported, with one death from internal hæmorrhage and one spontaneous recovery by formation of an abscess in the cul-de-sac, which was later discharged, per rectum. The remaining three cases were operated and recovered, one was tubal abortion and two, tubal rupture.

Genter, H.: Premature Separation of the Normally Situated Placenta (Vorzeitige Lösung der normal sitzenden Placenta). *Dissertation*, St. Petersburg, 1913.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The statistics collected by the author from the literature show that premature separation of the normally situated placenta occurs in 0.12 per cent of cases; his own cases show 0.17 per cent. Trauma is rarely the cause; but more frequently the cause is shortness of the umbilical cord and rupture of the membranes; still more important cases are hydramnios, twins, transverse presentation, narrow pelvis, and too strong pains; still more important are kidney changes, with or without simultaneous changes in the placenta, and placental decida. In the diagnosis, sometimes there are no demonstrable changes in the placenta and uterus; frequently there is anæmic infarct and hæmorrhage into the placental tissue. The placental tissue shows marked inflammatory and degenerative changes and sometimes there are inflammatory changes in the wall of the uterus; sometimes rupture of the peritoneal covering from overdistension of the uterus; and acute and chronic kidney affections are shown in a series of cases. The changes in the liver are like those in eclampsia.

The mortality for the child was found to be 81.6 per cent, in the cases from the literature; from the author's own cases, 82.2 per cent; the corresponding figures for maternal mortality were 23.1 per cent and 22.1 per cent. The earlier the separation takes place the worse the prognosis for mother and child; after delivery there is danger of hæmorrhage from atony. In treatment tamponing is useless. The indications vary with different cases. Rupture of the membranes is indicated in mild cases with good pains; in severe cases, vaginal, or even abdominal cæsarean section is indicated. If there is severe hæmorrhage from atony, and conservative treatment is refused, extirpation of the uterus should not be too long delayed.

HEIN.

Glinski, L. K.: The Hypophysis; and Its Changes During Pregnancy (Über die Hypophyse im allgemeinen und ihre Veränderungen während der Schwangerschaft). *Klin.-therap. Wchnschr.*, 1913, xx, 709; 742; 769.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author gives a detailed histological description of the hypophysis in 80 cases, including men and non-pregnant, pregnant, and puerperal women. In the poorly developed nervous part of the hypophysis the author could not demonstrate chromaffin substance; he thinks the nervous part represents a rudimentary sense organ. The greater physiological importance of the glandular part is shown by its greater richness in thin-walled blood-vessels and the contact with the gland cells.

The glandular cells are divided into two groups, the chromophobic and the chromophilic, and the latter are divided into eosinophile and basophile. The eosinophile cells are most numerous, the basophile next, and the chromophobic least numerous.

During pregnancy, the hypophysis increases in size and weight, not because of increased blood supply, but because of microscopical changes in the glandular part, which are most marked at the end of pregnancy and shortly after delivery. These changes consist principally in the appearance of a large number of clear chromophobic cells.

Glinski does not believe, however, with Erdheim and Stumme, that these are specific "pregnancy cells," but that they represent a hyperplasia of the ordinary chromophobic cells. He thinks these changes are due to increased functional activity of the ovary, and that the hypertrophy of the hypophysis explains some of the clinical symptoms of pregnancy, such as thickening of the bones of the face swelling of the face, and acromegaly. GRÜNBAUM.

Scherer, A.: Heart Disease and Pregnancy (Kasuistisches zur Frage Vitium cordis und Schwangerschaft). *Gynäk. Rundschau*, 1913, vii, 695.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

There were 57 cases of uncompensated heart lesions in 17,260 deliveries for the past ten years. Twenty-two of them were delivered spontaneously; delivery was accomplished twice with forceps; twice with Champetrier bags followed by version and extraction in head presentations; three times there was version and extraction with placenta prævia and transverse position; five times extraction in breech presentation; twice perforation; twice artificial premature delivery; and eight times induction of abortion. There were 11 deaths, 6 of were attributed to heart disease alone; the others had kidney and lung complications. SCHMID.

Neu, M., and Keller, F.: The Function of the Liver During Pregnancy (Zur Funktion der Leber in der Gravidität). *Monatschr. f. Geburtsh. u. Gynäk.*, 1913, xxxviii, 383.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The authors report the determination of sugar in the blood of normal pregnant and non-pregnant

women. Levulosuria was tested in 10 pregnant women; in only 2 of the women was the administration of 100 gms. of levulose followed by marked reduction in the urine. Examination of the sugar content of the blood by Tachau's modification of Knapp's method showed there was a certain variability in levulose assimilation during pregnancy, but they did not decide the question of how far the function of the liver and other glands was involved.

ENGELHORN.

Harabath, R.: Hypertrichosis in Pregnancy (Über Graviditätshypertrichosis). *Gynäk. Rundschau*, 1913, vii, 705.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Harabath, as well as Slocum, Begar, and Halban, counts increased growth of hair as one of the external symptoms of pregnancy. In a female dwarf rat dog, the under side of whose body is ordinarily almost hairless, he observed a growth of hair in two succeeding pregnancies, especially on the abdomen, and three or four months after delivery the abdomen was again hairless as before. In a female pug, hairless spots, from itch, disappeared during pregnancy and reappeared again after delivery.

He gives as a reason for this hypertrichosis the hyperæmia of the skin that takes place during pregnancy, comparing it with the effect of linseed poultices, and does not believe that it is due to a decreased secretion of the ovaries.

KREBS.

Ward, F. N.: Report of a Case of Papillary Cystadenoma of the Ovary Complicating Pregnancy.

Hahneman. Month., 1914, xlix, 11.

By Surg., Gynec. & Obst.

The author reports the case of a nulliparous woman, age 26, who was operated on for the above and apparently recovered. The main symptoms were abdominal pains, mostly on the left side, a tumor afterwards being found on the left side.

Because of their peculiar mode of invasion, fresh foci developing upon surrounding areas of the peritoneum until signs of pressure and obstruction occur, and in late cases, the pelvis and abdomen becoming so blocked by the papillomatous masses that it is impossible to remove them, the author advocates the early removal of all ovarian cysts as soon as discovered and, in conclusion, states that early radical surgical measures should be instituted in all papillomata of the ovary complicating pregnancy, for the following reasons: (1) The tendency of the growth to increase in size, and, during pregnancy, the liability of fresh implantations upon the surrounding peritoneal surfaces; (2) the possibility of some of the accidents occurring to the cyst itself, such as rupture or torsion of its pedicle; (3) the danger of the tumor complicating labor by interfering with the normal mechanism or by blocking the birth canal; and (4) statistics show that the operation is attended with no higher mortality during pregnancy than at other periods.

WM. D. PHILLIPS.

Puech, P., and Vanverts, J.: Tumors of the Ovary and Pregnancy (Tumeurs de l'ovaire et grossesse).

Rev. franc. de méd. et de chir., 1913, x, 243.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

A collection of 1,316 cases observed since 1886, showed dermoids 27 per cent solid: tumors 2.5 per cent. Ovarian tumors decrease the probability of pregnancy. In 12.5 per cent of cases, miscarriages, or premature delivery resulted from complications, size of the tumor, or adhesions. Pregnancy seems to increase the size of the tumors, only when they are malignant; the reports show torsion of the pedicle in 17 per cent of cases in contrast to 5 to 14 per cent in non-pregnant cases. Torsion of the pedicle is especially apt to occur in small abdominal tumors; rupture of the cyst in 3.5 per cent, generally fatal; the same is true of suppuration. Pelvic tumors of the ovary interfere with birth by causing displacement of the uterus; prolapse of parts of the fetus; secondary insufficiency of labor pains; or rupture of the uterus. Birth is made possible by pushing aside the tumor, or flattening it out, or, occasionally, by delivery of the tumor through the torn vagina.

Suppuration or torsion of the pedicle occurs often during the puerperium. The tumor may conceal the pregnancy or the pregnancy the tumor. Tubal pregnancy, pedicled fibrous retroflexion of the pregnant uterus, or hydramnios may cause errors in diagnosis. Exploratory laparotomy may be done if there are dangerous symptoms.

The maternal mortality at present is only 6 per cent, in contrast to 31.5 per cent in 1861. Abdominal tumors are more dangerous during pregnancy, pelvic ones during delivery. The present rate of infantile mortality during pregnancy is 13.5 per cent; while formerly it was 83 per cent.

In the treatment of abdominal tumors during pregnancy, ovariectomy is indicated during the first half, for the sake of continuing the pregnancy, and may be performed at any time for rapid growth of the tumor, malignancy, torsion of the pedicle, rupture, or suppuration. For pelvic tumors, the tumor may be pushed up; ovariectomy may be done during the first half of pregnancy, always through the abdomen. During delivery in case of abdominal tumors, forceps, version, and artificial dilatation of the os are permissible. Pelvic tumors may be pushed up, with the patient under anæsthesia, in the knee-elbow or Trendelenburg position. Cysts may be punctured. Incision of the cyst from the vagina is dangerous as it may cause inflammation, suppuration of the cyst, or peritonitis. Ovariectomy followed by spontaneous delivery or forceps may be done. For extensive adhesions or impaction of the tumor, cesarean section followed by ovariectomy is indicated, though this may be contra-indicated by malignancy, difficulty of extirpation, or bad condition of the patient.

Artificial delivery of the placenta is indicated only when the tumor interferes with its natural delivery. Laparotomy is dangerous during the puerperium, and should be done only when abso-

lutely necessary. Lutein cysts in conjunction with hydatidiform mole, which are not infrequent, generally disappear spontaneously. MOHR.

Winter: Active and Conservative Treatment of Eclampsia (Aktive und konservative Eklampsiebehandlung). *Monatschr. f. Geburtsh. u. Gynäk.*, 1913, xxxviii, 346.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Winter has recently treated the cases at his clinic exclusively by blood-letting and Stroganoff's method in order to make a comparison with his preceding method of immediate delivery. Thus far he has the impression that this comparison will not result favorably to immediate delivery, though he still thinks this is superior to any other method for very recent cases. He believes that the results obtained by early vaginal cesarean section would be more favorable if it were possible to group the cases accurately, as Freund proposes, according to the duration of the disease. But this can hardly be done, for the first attack does not mark the beginning but a rather advanced stage of the disease. He thinks it is a mistake to reckon the puerperal eclampsias with the early deliveries, as Lichtenstein proposes. These have already passed through many hours of intoxication, which for some unknown reason has not manifested itself sooner. Winter believes the pains have a very harmful effect.

He chooses from his material the cases in which the first attack began at the very beginning of labor, and from 92 cases gets the following results: 8 cases in which labor was not interfered with, 40 per cent mortality; 19 cases delivered after the os was dilated, 30 per cent mortality; 32 cases delivered late in the second stage by incision or metrurosis, 25 per cent mortality; 34 cases delivered by early vaginal cesarean section, 9 per cent mortality; and 22 cases delivered by cesarean section immediately after the beginning of the eclamptic attack, no mortality.

He believes that for the early cases cesarean section is still the best method of treatment, while for cases where a long-standing intoxication has made the results of immediate delivery uncertain, Stroganoff's method should be preferred. ZINSSER.

Rongy, A. J.: A Preliminary Report on the Treatment of Toxæmias of Pregnancy, with Placental Serum. *N. Y. St. J. Med.*, 1914, xiv, 21.

By Surg., Gynec. & Obst.

This report is based on a series of four cases of severe pernicious vomiting of pregnancy and two cases of threatened eclampsia, treated with placental serum. According to the histories, four cases showed marked improvement. The author's treatment is based on the following theories:

1. The toxæmias of pregnancy are secondary to some poisonous protein substances circulating in the maternal circulation, which have their origin in the product of conception.

2. The composition of foetal serum-albumin is different from that of maternal blood serum-

albumin. Under varying pressure in foetal and maternal systems, foetal serum-albumin enters the mother's blood by dialysis. It acts as an antigen and provokes the formation of antibodies. When foetal serum enters the mother's blood the union of this antigen with the antibodies leads to anaphylactic symptoms of which eclamptic convulsions are one. The severity of the toxæmia will depend upon the amount of these substances in excess of the antibodies. A. H. SCHMITT.

Werner, P.: Bacteriological Examination in Febrile Abortion (Bakteriologische Untersuchungen beim fieberhaften Abort). *Ztschr. f. Gynäk. u. Geburtsh.*, 1913, lxxiv, 481.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Forty-five cases of febrile abortion from the second to the fifth month were treated actively, with 36 uneventful recoveries, 80 per cent; 2 slight complications, 4.4 per cent; 3 severe complications, 6.6 per cent; and 4 deaths, 9 per cent. Examination of the secretion did not give any results that could be utilized clinically. Streptococcus hæmolyticus in the secretion makes the prognosis somewhat more unfavorable. Among 11 cases showing streptococcus hæmolyticus there were 2 deaths. But death is possible with non-pathogenic bacteria in the secretion, and uneventful recovery, with streptococcus hæmolyticus. Finding bacteria in the blood once does not prove anything, but finding them repeatedly indicates an unfavorable prognosis. Among 6 cases in which bacteria were repeatedly found in the blood there were three deaths, 1 severe complication, and 2 uneventful recoveries. The clinical rather than the bacteriological findings are decisive. If the infection has involved the uterine substance, its blood and lymph-vessels and the tissue surrounding them, the prognosis is doubtful.

The question is not how to treat, but when. The uterus must be emptied before the disease has had time to extend. Propagation of the bacteria by emptying the uterus need not be feared. Among five cases in which the blood was found sterile before emptying the uterus, bacteria were found in it afterward in three cases, but they became sterile again after 24 hours. If the infection has passed the boundaries of the uterus, emptying the uterus is contra-indicated, and early vaginal total extirpation is to be recommended. BISCHOFF.

Werner, P.: Technique and Results of Simultaneous Abortion and Sterilization in Pulmonary Tuberculosis (Erfolge und Technik der einzeitigen Schwangerschaftsunterbrechung und Sterilisierung bei Tuberkulose der Lungen). *Zentralbl. f. Gynäk.*, 1913, xxxvii, 1581.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

During the past two and one-half years, the above operation has been performed at Wertheim's Clinic 60 times. The patients were between the sixth week and fifth month of pregnancy and had active tuberculosis of the lungs or larynx, or

inactive pulmonary tuberculosis with poor general condition or other complications. The method of choice in such cases is vaginal section, emptying of the uterus and suture of the cervix, pushing aside of the bladder and resection of the uterine end of the tube, preferably without encroaching on the uterus. The procedure is easy and its advantages are that it accomplishes both purposes at one time, avoids laparotomy, and the mutilation is slight. Atony of the uterus may be avoided by an injection of pituitrin or glandutrin-ergotin. There was one case of death from hæmorrhage resulting from perforation of the anterior uterine wall; the operation was successful in all other cases, recovery occurring after 8 to 9 days. There was no immediate mortality from the tuberculosis. The mortality after a year was 4 per cent, and of 25 women who had had the operation performed more than a year before, one died of tuberculosis, 20 felt thoroughly well, while 4 were troubled with severe cough and expectoration.

BIENENFELD.

Ludwig, F.: Treatment of Abortion (Die Abortbehandlung). *Prakt. Ergebn. d. Geburtsh. u. Gynäk.*, 1913, v, 184.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Ludwig reports the material of the Bern Gynecological Clinic for the past ten years. Of 296 abortions outside the clinic, 223 were afebrile, 72 febrile; of the former, 4 per cent showed slight rises in temperature during their further course. Of the febrile cases, the fever continued in 5 cases after the evacuation of the uterus; only one showed severe complications; there were no deaths. Of 326 clinical abortions, 240 were afebrile, 86 febrile; of the former cases, 10 had fever afterward, 1 with complications. Of the febrile cases, the fever disappeared promptly after evacuation; in 65, 14 had slight fever afterward, 4 had severe complications, and 3 died; the mortality was 1.9 per cent.

The treatment is active, digital, and instrumental evacuation of the uterus; conservative use of the curette is recommended. Besides early operation, thorough disinfection of the genitalia with tincture of iodine is important; bacteriological indications are not considered.

BONDY.

LABOR AND ITS COMPLICATIONS

Sellheim, H.: An Important Difference between Normal Birth and Artificial Delivery (Über einen wesentlichen Unterschied zwischen natürlicher Geburt und künstlicher Entbindung). *Beitr. z. Geburtsh. u. Gynäk.*, 1913, xix, 1.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The birth power (this expression is better than expulsive power) consists in an element that molds the foetus and an expulsive element. The latter exerts a force on the foetus from all sides and from behind. In artificial delivery the first element is lacking, the individual parts of the foetus having no pressure exerted upon them, as is shown by sche-

matic figures in head and breech presentations. The head is really separated from the shoulder by forceps; the shoulder stays back, its delivery following more slowly than in normal birth. In pelvic presentations the pelvis is drawn forward by the forceps while the arms and also the face and chin hang back. Even a combination with expression does not get the same results as natural birth, for uniform pressure can not be exerted on all sides; this is partially compensated for by the fact that all operative procedures induce birth pains. By utilizing these pains as much as possible, disturbances of the normal condition of the foetus in artificial delivery may be avoided.

KERMAUNER.

Jardine, R.: The Retraction Ring as an Obstruction in Labor. *Med. Press & Circ.*, 1914, xcvi, 32.

By Surg., Gynec. & Obst.

In the author's opinion, the retraction ring forms several inches higher up than the internal os and he divides the cases into three groups, according as the retraction ring forms: (1) In front of the presenting head; (2) above the presenting head; or (3) in breech presentations.

In the first class the diagnosis is made by feeling the head well above the brim of the pelvis and finding the head cannot be pushed down; the ring may be felt both through the abdomen and the vagina. In these cases, if the child is alive, he advises cæsarean section, and if the child is dead, craniotomy. The prognosis is good if the condition is recognized early, before the mother is exhausted.

In the second class, if the patient is thin, and on palpation the ring can be felt, internal examination will show the head high up but not obstructed and on passing the fingers above the head the ring is felt in front of the shoulders. The author again advises cæsarean section if the child is alive and says it will be necessary to divide the ring in order to deliver the head. If the child is dead, craniotomy should be resorted to.

In the third class he advises that the patient be anesthetized, and the physician's flattened hand be passed in front of the child until a foot is reached, which is then swept inwards over the front of the child and brought down. When the leg is brought down traction should be made upon it, while an assistant keeps up firm pressure upon the fundus of the uterus. If the arms are caught, they must be relieved by sweeping them over the front of the child, and the after-coming head must be dealt with in the usual way. The prognosis is as good for the mother and child as in the average breech case that requires artificial delivery.

WM. D. PHILLIPS.

Bilsted, E.: Prolapse of Both Lower Extremities Beside the Head (Vorfall beider Unterextremitäten neben dem Kopfe). *Zentralbl. f. Gynäk.*, 1913, xxxvii, 1398.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The patient was a 30-year-old primipara with normal pelvic measurements. Fourteen months

previous she had had a miscarriage in the third month. Two days before admission to the hospital the membranes had ruptured, but she had continued to walk about the house; after admission to the hospital she had strong pains for 24 hours; and internal examination showed prolapse of the left foot, which on being drawn down to the vulva was drawn back. Further examination showed the head in the posterior position between the two feet, with the toes directed forward. Extraction was easily accomplished with Breuss' forceps: the child, weighing 2,850 gms., was dead.

Bilsted calls attention to the rarity of such an acrobatic position, and cites Von Franqué, who mentions the prolapse of both feet beside the head as one of the rarest of obstetrical complications. The cause in this case was thought to be the early rupture of the membranes and the subsequent walking around, as there were none of the other probable causes present, such as multiple pregnancy, hydramnios, narrow pelvis, twin pregnancy, or abnormalities of the uterus. He emphasizes the difficulty of diagnosis and also of delivery which must be accomplished by forceps or perforation.

BONZEL.

Gilbert, H.: Subcutaneous Emphysema of the Face, Neck and Chest, During Labor. *Australas. M. Gaz.*, 1913, xxxiv, 583.

By Surg., Gynec. & Obst.

Gilbert reports a case of the above occurring in a primipara with delivery of a stillborn child by forceps, followed by the recovery of the mother. This condition is very rare and the general view held is that the condition arises from rupture of the air vesicles at the root of the lung. The air therefore escapes underneath the pulmonary pleura into the anterior mediastinum, and so on underneath the cervical fascia up over the neck and chest. There are, however, some who believe that the condition is due to injuries to the respiratory tract higher up—for example, in the mouth and trachea. Judging by published cases, the patients were invariably primiparæ. There were in all cases considerable straining efforts made during the second stage. In a considerable number of cases pain is complained of, and is very often situated about the region of the seventh or eighth rib. The outlook is good: the patients invariably recover. If the pain is excessive during breathing the affected side should be firmly strapped as in fractured ribs.

WM. D. PHILLIPS.

PUERPERIUM AND ITS COMPLICATIONS

Schweitzer, B.: Prophylaxis of Puerperal Fever; and the Bacteriology of the Vagina of Pregnant Women (Zur Prophylaxe des Wochenbettfiebers, zugleich ein Beitrag zur Bakteriologie der Scheide Schwangerer). Leipzig: Hirzel, 1913.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Puerperal fever from auto-infection with bacteria from the vagina is recognized, although previous

attempts at disinfection of the vagina have not succeeded.

Some experiments were made with 0.5 per cent lactic acid under bacteriological control. The secretion was rendered normal in 81.5 per cent of the cases; in three cases, only after 30 to 40 days. The cocci gradually disappeared and rods appeared. Only three cases showed streptococci till delivery, after 15 to 25 days of irrigation. Lactic acid has a certain bactericidal power and the controls showed that of 27 cases with abnormal secretion, irrigated for at least ten days, only one had fever. From a larger material without bacteriological control and with only macroscopical examination of the secretion, it was found that of 665 women only 7.67 per cent had fever, while of 147 who did not receive sufficient irrigations, 22 per cent had fever. In cases with normal secretion the clinic reports showed fever in only 7.45 per cent, the secretion being really rendered normal by the irrigations.

Therefore, the method is adapted for the prevention of puerperal fever. The necessity for such prophylaxis and the question of spontaneous infection is taken up, and a case of death in the Leipzig clinic described, together with some others from the literature. The second part of the book is concerned with the biology of the bacillus vaginalis. Pure cultures on grape-sugar agar showed confluent transparent colonies. There was facultative anaërobic growth, especially on acid media with reducing substances. It is closely related to other lactic-acid-forming rod-shaped bacilli. Among the streptococci, lactococci were not pathogenic and were closely related to the streptococcus acidilactici.

KERMAUNER.

Zweifel, P.: Prophylaxis of Puerperal Fever, Caused by Spontaneous Infection (Die Verhütung der durch Spontaninfektion verursachten Wochenbettfieber). *Zentralbl. f. Gynäk.*, 1913, xxxvii, 1443.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In spite of all methods of disinfection, puerperal fever has not yet been conquered. However, Zweifel thinks he has now found a means of accomplishing this. Lactic acid ferment is a part of the normal content of the vagina, and pregnant women with an abnormal vaginal secretion have very little acid. Therefore, in such women, prophylactic irrigations of 5 per cent lactic acid were carried on for ten days. Under this treatment, women with abnormal vaginal secretion were not troubled with fever any oftener than normal women; the morbidity fell from 28.6 per cent to 7.6 per cent; while in those with normal secretion it is 7.2 per cent. Twenty-one per cent of the women who had less than ten irrigations had fever. Schweitzer has shown that the vaginal flora changes in character under the influence of the irrigations.

Zweifel reports a case of a woman who died of puerperal fever, and another who had a very severe case of it, without any examination by the midwife; he also

cites cases reported by Poten. The old saying that danger always comes from outside is not true, but auto-infection is not the right term; it is a spontaneous invasion of germs. The practical conclusion to be drawn is that the midwife should always report cases of abnormal vaginal secretion and the physician should treat them; moreover, in case of death from puerperal fever the midwife should not at once be blamed, but all the conditions in the case should be carefully examined.

KERMAUNER.

MISCELLANEOUS

Fraenkel, L.: Ovulation, Conception, and Duration of Pregnancy (Ovulation, Konzeption, und Schwangerschaftsdauer). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxiv, 107.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The changes preceding pregnancy and menstruation are caused by the corpus luteum; therefore, ovulation must precede menstruation. A fresh corpus luteum can generally be found 19 days at most before the beginning of menstruation. The exact day of rupture of the follicle cannot be determined; differences in the sexual cycle, and individual factors, cause slight variations. The author found, among 10,000 women, 109 who conceived after a long period of amenorrhoea, 74 of these without any menstruation intervening, 35 after a single menstruation. He concludes, therefore, that impregnation follows immediately after ovulation, not after the menstruation that follows it.

If these figures are regarded as decisive, pregnancy begins a considerable time after the last menstruation and its duration is shorter than it has been considered heretofore. When the date was counted from the last menstrual period the greatest possible error in computing the age of the ovum was 4 weeks—that is, the time between the last period and the first one that was missed; since the time of ovulation is taken as the beginning of pregnancy, it is reduced to the interval between ovulation and menstruation.

HARM.

Fetzer, M.: Studies of Metabolism in Pregnancy, Based on Experiments on Pregnant Animals and their Foetuses, on Diets Rich and Poor in Iron (Studien über den Stoffhaushalt in der Gravidität nach experimentellen Untersuchungen des Verhaltens trächtiger Thiere und ihrer Früchte bei eisenreicher und eisenarmer Ernährung). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxiv, 542.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In rabbits which receive an abundant amount of ferratin during pregnancy there was a marked increase in the iron content of both mother and foetus; but when iron was withheld from the mother, there was a decrease in the iron content of the foetus. It seems possible, therefore, to exercise a certain qualitative and quantitative effect on the foetus through the mother's diet. In animals from which iron was withheld, iron was taken from the mother's tissues to supply the foetus, to such an

extent that the mother sometimes suffered a deficit; this, however, was only carried to a certain degree, enough being retained to carry on the mother's vital functions. If iron was withheld to the point where the functions could not be maintained and iron still given up to the foetus, the foetus died *in utero*.

GINS.

Abderhalden, E., and Fodor, A.: Protective Ferments against Milk Sugar, in the Blood Serum of Women During Pregnancy and the Puerperium (Über Abwehrfermente in Blutserum Schwangerer und Wöchnerinnen, die auf Milchzucker eingestellt sind). *München. med. Wchnschr.*, 1913, lx, 1880.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

On the artificial addition of milk sugar to the blood, protective ferments, which are capable of altering this disaccharide, appear in the serum. Therefore, the authors instituted experiments to determine whether similar substances are to be found in the blood serum of women during pregnancy and the puerperium.

In 12 pregnant women, at different periods of pregnancy they could demonstrate no protective ferment against milk sugar. In only one, in the tenth month, milk sugar was decomposed. Likewise, among 10 patients, during the puerperium, the serum of only one decomposed lactose. The examination of the serum must be supplemented by that of the urine.

BENARIO.

Neumann, J.: Principles of Nutrition During Pregnancy (Über Ernährungsprinzipien während der Schwangerschaft). *Wien. med. Wchnschr.*, 1913, lxiii, 2510.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Factors of importance in the development of the foetus are inheritance, age of the woman, number of preceding births, and, for its size, the age of the ovum at the time of impregnation. The nutrition of the mother, abundant or limited fare, has in general no effect on the weight of the child. The author therefore denies the value of the Prochownik diet. There is, however, a deposition of iron, calcium, and magnesium in the foetus; blood from the umbilical cord is richer in these minerals than that from a retroplacental hæmatoma. It is well, therefore, to have an abundance of mineral salts in the diet during pregnancy as well as of fats, for the latter are retained by the mother for use during the period of lactation. In the second half of pregnancy it is well to limit the albumin in the diet, because of the danger of eclampsia.

EHRENBERG.

Cramer, H.: Hydramnios from Deficient Absorption of Amniotic Fluid (Hydramnion infolge mangelnder Resorption des Fruchtwassers). *Monatsschr. d. Geburtsh. u. Gynäk.*, 1913, xxxviii, 251.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Under normal conditions not much urine is passed by the foetus into the amniotic cavity. The am-

notic fluid is normally disposed of by swallowing. The large quantities of fluid, swallowed by the foetus, pass through the intestinal wall into the foetal circulation and from there into the mother's system. If there is any hindrance to swallowing, hydramnios may arise. This is why hydramnios is so frequently found associated with stenosis of the oesophagus or duodenum, anencephaly, severe hemi-cephaly, or extensive fissures of the spinal cord, where the swallowing reflex is disturbed by defective development of the nervous centers. The author describes a case of extreme hydramnios in which the child died after a few respirations. The retreating lower jaw was pressed firmly against the posterior wall of the pharynx; there were no lanugo hairs, epidermal scales, or any constituents of the vernix caseosa in the infant's intestinal tract. Further cases of this sort would confirm the correctness of his theory.

EHRENBERG.

Thierry, H.: Electrical Irritability in Pregnant Women (Untersuchungen über die elektrische Erregbarkeit bei Schwangeren). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxiii, 773.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author carried out experiments on the median nerve of the right arm in 110 women, 70 of whom were pregnant. The results were as follows: (1) On electrical examination of 70 pregnant women, in the ninth and tenth months, she found an increase in the electrical irritability in 80 per cent. (2) This increase reached the highest degree shortly before delivery; in 69 per cent of the cases it was within Stintzing's limits, but in 11 per cent it reached the height observed in tetany. (3) Even in women whose nervous irritability was not increased during pregnancy, there was an increase during delivery. (4) During the puerperium the irritability decreased and gradually disappeared.

HARM.

Erdheim, S.: Hypertrophy of the Mammary and Accessory Breast Glands During Pregnancy (Über Graviditätshypertrophie der Mammae und der Akzessorischen Brustdrüsen). *Wien. klin. Wchnschr.*, 1913, xxvi, 1571.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Abnormal hypertrophy of the mammary glands may be due to puberty or pregnancy. The author reports one case of each kind. In a 13-year-old girl, one year after the beginning of menstruation, the breasts developed rapidly to the size of a man's head and the body became greatly emaciated. The growth stopped spontaneously after a year and a half, and the emaciation gradually disappeared. Hypertrophy during pregnancy begins with the pregnancy, and the growth is much quicker. The following case is described:

A 22-year-old patient had become pregnant three years before, and abortion was induced because of the enormous growth of the breasts and an accessory breast gland on each side; the swelling then disappeared. With the beginning of the second pregnancy

there was an excessive increase in the size of the breasts, with great pain, and abortion was performed again with the same results. A piece was excised and microscopical examination showed that the structure was like that of a normal gland in a pregnant woman.

Twenty cases have been reported in the literature, seven of which were examined microscopically. Internal treatment and compression have been unsuccessful, the radical treatment being the removal of both mammary glands, which has been done several times. Artificial abortion is also justified if the patient is too weak to bear removal of the breasts or if she refuses it on account of the deformity which would result.

HERZOG.

Heynemann, T.: Position of the Heart and Diaphragm During Pregnancy (Herz- und Zwerchfellstand während der Schwangerschaft). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxiv, 854.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

At the end of pregnancy the diaphragm is practically always displaced upward. The amount of this displacement varies in the author's röntgen pictures from $\frac{1}{4}$ to 4 cm., the average being 2.11 cm. This causes a transverse position of the heart and a bend at the entrance of the great vessels. In his cases the transverse diameter was increased 0.7 to 3.2 cm., with an average of 1.79 cm. There are marked individual differences, but it was not possible to distinguish two different types according to the size of the thoracic and abdominal cavities. The displacements of the heart and diaphragm generally become noticeable in the eighth month of pregnancy, causing an increase in the heart's work at the end of pregnancy. However, the respiratory movements of the diaphragm, which are apparently little affected, support the heart in its increased work. The high position of the diaphragm probably has the same effect, as it secures a better emptying of the heart, which results in an increased volume of blood at each beat. The cause of the accidental murmurs during pregnancy is the bending of the pulmonary artery. These murmurs are frequently stronger on deep expiration, or appear only at that time, and they disappear when the puerperal patient, or sometimes even when the pregnant patient, stands up. The heart and diaphragm, therefore, are in a position to meet the increased demands of pregnancy with increased activity. The author's observations tend to confirm the conception of pregnancy as a physiological process.

RUNGE.

Nagy, T.: Malignant Degeneration of the Epithelium of Misplaced Chorionic Villi (Über maligne Entartung der Epithelien primär verschleppter Chorionzotten. Beitrag zur Frage des malignen Chorion-epithelioms). *Arch. f. Gynäk.*, 1913, c, 430.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

When the epithelial origin of malignant chorion-epithelioma and the capacity of the chorionic epithelium for malignant degeneration, were discovered

chorio-epithelioma was classified as a malignant epithelial blastoma. Later investigations, however, revealed peculiar properties of the epithelium of the chorionic villi. Groups of foetal cells, endowed with a capacity for uncontrolled proliferation, were found in the maternal tissues at a great distance from the placenta. This invasion of chorionic villi is peculiar, in that the cells show different physiological reactions and staining capacities, so that it is difficult to distinguish syncytial and Langhan's cells, but Meyer demonstrated the relationship of these cells with those of the placenta. The physiological epithelial cells of the chorion differ very much in morphology, so a characteristic morphology could not be demonstrated.

Malignancy of the epithelial cells of the villi can be diagnosed only with the aid of clinical examination by Marchand's method; but if clinical symptoms are waited for, operative interference is often too late. Meyer's method, which is sometimes effective, consists in removing some of the muscular tissue by curettage, and examining it to see how much destruction has been brought about by the foetal cells, thus determining their malignancy. But in so doing it must not be forgotten that the normal foetal epithelium exhibits a considerable degree of histolysis, and a greater knowledge of the destructive action of the normal cells must be gained before we can distinguish malignancy with certainty.

The author describes a case of his own, which showed signs of malignant degeneration, on account of which he removed the uterus through the vagina. He gives a detailed description of the histological specimens from the case, their significance, and the possibility of the chorionic villi undergoing malignant degeneration.

VON MILTNER.

Broca, A., Francois, R., and Bize: Periosteal Dysplasia and Multiple Intra-Uterine Fractures (Dysplasie périostale et fractures intra-utérines multiples). *Rev. d'orthop.*, 1913, xxiv, 289.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The authors distinguish three groups of congenital bone defects, viz., congenital rickets, achondroplasia, and what they call periosteal dysplasia. The latter is distinguished from achondroplasia by the fact that the compact substance of the diaphyses of the long bones, clavicle, bones of the hands and feet, and ribs, is replaced by spongy tissue, without any abnormality in the ossification of cartilage. They describe such a case in a child, six weeks old, in which there were multiple fractures of all the extremities and macroscopically, as well as histologically, there was great similarity to a very far advanced case of rickets.

WEBER.

Ahlström, E.: Momburg's Method (Über die Anwendung der Momburgischen Methode). *Nord. med. Ark.*, 1913, xlv, 1.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author gives a detailed report of 27 surgical and 246 obstetrical cases from the literature, and two

obstetrical cases of his own; as a supplement he gives experiments on rabbits and dogs with registration of the blood-pressure while the constriction was applied.

He concludes that Momburg's method of compressing the aorta by tying a rubber tube around the abdomen is very effective, if properly used. The disappearance of the femoral pulse is used as a control; and it not only causes cessation of hæmorrhage directly, but it also induces contractions of the uterus, which overcome atonic hæmorrhage and hasten the delivery of the placenta; often manual extraction of the placenta can be avoided. There are some disadvantages attending this method, for instance, great variations in the blood-pressure; heart failure, arteriosclerosis, and nephritis must also be looked out for. There is danger of injuring the intestine in surgical cases, and sometimes pain is caused, but this can be overcome with morphine. Especial care must be taken in removing the tube on account of the sudden fall in blood-pressure. It should always be done in the Trendelenburg position, with the legs raised and bound with tubes or elastic bandages, which should not be removed until some time after the abdominal tube has been removed.

K. HOFFMANN.

Samuels, J.: Three Cases of Development of the Fœtus Outside the Chorion (Über extrachoriale Fruchtentwicklung im Anschluss an drei Fälle). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxiii, 631.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Development of the ovum outside the chorion is rather rare, but it has a clear-cut clinical and anatomical picture. It is similar to the cases that have been described of development of the embryo outside the amnion, and is distinguished from it by the stage of development at which rupture takes place. In development outside the amnion the disturbance takes place before the amnion has become adherent to the chorion; that is, before the beginning of the third month of pregnancy. Development outside the chorion occurs before the parietal and the reflex decidua have become adherent, but probably after the adhesion of the chorion and amnion, in the third or fourth month of pregnancy. Rupture in the later months, with undisturbed development of the embryo inside the membranes, occurs after the adhesion of the parietal and reflex decidua, that is, in and after the fifth month, but it is not markedly distinguished from extrachorionic development.

The clinical picture called "hydrorrhœa gravidarum or decidualis" is a rupture taking place in the later months of pregnancy, often far above the internal os. The author proposes instead of this term to use "rupture of the membranes in the later months" or "hydrorrhœa with undisturbed development of the fœtus inside the membranes." The cause of the rupture has been sought in endogenous and exogenous disturbances; it is probably sometimes due to artificial interruption of the

pregnancy. After the amniotic fluid is discharged the birth does not take place because the uterus, adapting itself to the new conditions, shows a sort of indolence, such as is observed in missed labor and missed abortion. The study of gross and microscopical specimens does not give any definite information as to where the fluid is produced. The origin of placenta marginata in cases of normal intramembranous and of extrachorionic development is to be attributed to disturbances in the physiological implantation of the ovum. HARM.

Krukenberg, R.: Can Retroplacental Blood and Blood from the Umbilical Vein be Used to Diagnose Maternal and Foetal Syphilis by the Wassermann - Neisser - Bruck Complement-Fixation Reaction (Sind Retroplacental- und Nabelvenenblut zur Diagnose der mütterlichen bzw. kindlichen Syphilis durch die Wassermann-Neisser-Bruck'sche Komplementbindungsreaktion verwendbar)? *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxiv, 451.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Serum from retroplacental blood cannot be used alone to determine the Wassermann reaction and decide whether the mother has syphilis, for it gives a positive reaction in 30 per cent of apparently healthy women. This percentage increases in cases of pathological delivery to 36.5; in protracted labor and in abnormally severe labor pains, to 46.1; in eclampsia, intra-partum and post-partum, and in difficult or abnormal delivery of the placenta without syphilis, to 55.5. Anæsthesia of the mother, fever, or loss of blood to over 500 gms. in the post-partum period, do not noticeably increase the number of positive reactions with retroplacental blood. If retroplacental blood is used and the reaction is positive another test should be made with blood from the arm veins. It would not be necessary to puncture the arm veins in the negative cases. The positive reaction with retroplacental blood is probably due to the presence of albumin-lipoid combinations originating in the placenta.

Blood from the umbilical vein of healthy children of healthy mothers as a rule gives a negative Wassermann reaction; it is positive only in hereditary syphilis, never, if syphilis is not present, in eclampsia of the mother, in premature delivery, anæsthesia, fever, protracted labor, hæmorrhage, or other abnormalities post-partum, nor yet in deeply asphyxiated or stillborn children. A negative Wassermann reaction from the blood of the umbilical vein does not exclude a foetal syphilis acquired at birth, nor does it exclude a hereditary syphilis.

In all these cases the serodiagnostic examination of the child should be repeated several times at long intervals. The negative Wassermann with umbilical vein blood is changed to a positive when extract of placenta is mixed with the blood in only 5 per cent of the cases, in the other 95 per cent it remains negative. Neither is the reaction changed by mixing amniotic fluid with the blood. In spite of the limitations mentioned above, blood from the umbilical vein is well adapted for making the

Wassermann test for syphilis of the new-born, and its use is recommended in all cases in hospitals and in those in private practice where there is any suspicion of syphilis, in addition to the serological testing of the blood from the veins of the mother's arm. RUNGE.

Schmid, H. H.: Increasing the Size of the Pelvis by Resection of the Promontory (Über dauernde Erweiterung des knöchernen Beckens). *Ver-samm. deutsche Naturforsch. u. Ärzte*, Wien, 1913. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author reports eight cases from the obstetrical clinic in Prague in which resection of the promontory was performed. This new obstetrical operation, which was devised by the author and Rotter, of Budapest, independently, consists in chiseling off the greater part of the fifth lumbar and the first and second sacral vertebræ by the transperitoneal route. In this way an increase of $1\frac{1}{2}$ to 2 cm. is easily obtained in the anteroposterior diameter. The operation offers no technical difficulties, the bleeding from the bones being slight.

In seven out of the eight cases the operation was performed in connection with cesarean section for relative indications; one of the seven died of peritonitis, which was to be attributed to the laparotomy rather than to the resection of the promontory. The eighth patient had already had a cesarean section and a stillborn child, and in the fourth month of her third pregnancy the resection was performed. At the end of her pregnancy she gave birth to a mature child, which, because of a transverse position and prolapse of the cord, had to be delivered by version and extraction; the head was easily delivered.

This case proved for the first time that resection of the promontory secures permanent increase in the size of the pelvis. The operation is, therefore, the only rational treatment for narrow pelvis.

Fränkel, L.: Delivery, After Uniting a Double Uterus by Operation (Geburt nach operativer Vereinigung doppelter Gebärmutter). *Berl. klin. Wchn-schr.*, 1913, l, 1589.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

A patient had had three miscarriages, or premature deliveries, of non-viable children. Examination showed duplication of the genital organs. The body of the uterus was completely separated, the cervix was united, but there was a median partition, separating it into two halves, and there was also a septum in the vagina. The patient was very anxious to have a living child, and as neither of the halves of the uterus was capable of producing one, Fränkel undertook to unite them by operation. He excised the septum of the vagina and cervix through the vagina, then, by laparotomy, excised a wedge from each of the uteri and sutured the two together so as to form a new uterine cavity. There was an uneventful recovery and, two years later, the patient had a normal child weighing 6 lbs., delivered spontaneously at normal term. ZINSSER.

GENITO-URINARY SURGERY

KIDNEY AND URETER

Mayo, W. J.: Accidental Injuries to the Descending Portion of the Duodenum, During Removal of the Right Kidney. *J. Am. M. Ass.*, 1914, lxii, 343.
By Surg., Gynec. & Obst.

The anatomical relations of the retroperitoneal portion of the duodenum are such that this organ may be injured during operations for the removal of the right kidney. Such injury, however, can only occur if there be infiltration about the pedicle which has caused close adhesion to the duodenum. The duodenum in its descending course overlies the pedicle of the right kidney and a considerable portion of the lower half of that organ on the inner side. As this portion of the duodenum is retroperitoneal and more or less fixed in position, one can readily understand how the accident might occur under such circumstances. The exact relationship of the duodenum to the right kidney depends on the mobility of the latter organ, which lies somewhat lower than the left kidney and is more or less movable, normally.

Infection and ulceration of the pelvis and secondary involvement of the connective tissue in the pedicle leads to fixation and shortening of the pedicle together with adhesion to the neighboring viscera on the right side, and sometimes to the duodenum in its retroperitoneal portion. In such cases, subcapsular nephrectomy is adequate, but, if the fixation is due to carcinoma of the pelvis, the kidney and capsule with the pelvis and a sufficient portion of the ureter must be removed, and it is in these cases that the duodenum will be endangered even by the most expert and careful surgery. The injury is usually caused by heavy-toothed forceps which are applied hurriedly to check a sudden hæmorrhage from loss of control of the pedicle of the kidney—the vena cava is often injured in the same manner. The fingers are a safe substitute for forceps to temporarily check the bleeding. Vessels the size of the renals fairly jump into the fingers and can be held until the non-biting forceps can be safely applied. As a rule, the injury to the duodenum is not manifested for several days. The injured part becomes necrotic and a duodenal fistula of a most distressing type results which will often, if not usually, cause the death of the patient.

With an adequate incision for the removal of the kidney, such as has previously been described by the author, injuries to the duodenum or failure to secure the vessels accurately will seldom occur. Division of the structures behind the twelfth rib, combined with transverse incision, mobilizes the lower wall of the chest, and with the patient lying

on the loin of the opposite side, well elevated in a saddle, nephrectomy has been made a safe procedure, because it is done under the eye.

What can be done to repair the damage when a duodenal injury occurs is the crux of the problem, for, as a rule, the injury is not made manifest until several days after the operation. The character of the fistula does not lend itself to spontaneous healing; the gastric, intestinal, pancreatic, and biliary secretions in combination rapidly enlarge the opening, irritate the skin, and exhaust the patient. In such cases a transperitoneal attack on the fistula should be made and the descending duodenum lifted from its bed. The opening should be sutured and a flap of peritoneum or omentum transplanted across the suture line, and, finally, a jejunostomy should be done for temporary feeding purposes.

Rosenblatt, J., and Margoulies: Pyelography (Zur Pyelographie). *Verhandl. d. deutsche Röntgen. Gesellsch.*, 1913, ix, 81.
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

A 45-year-old patient had pain in the left kidney region and kinking of the ureter was suspected; therefore 40 ccm. of a 5 per cent solution of collargol was injected without any difficulty. While the röntgen picture was being taken she suddenly collapsed, and died after 15 hours. The diagnosis of rupture of the pelvis of the kidney was confirmed on post-mortem. There was no collargol in the ureter or kidney pelvis, but the cellular tissue around them at a distance of three finger breadths from the bladder was soaked with it. There was no tear visible, either in the ureter or pelvis. Probably there was a very slight tear in the kidney tissue. Although microscopical examination was not made, it may be assumed that the collargol, as in Blum's experiments on the cadaver, was pressed out through the ruptured kidney tubules into the lymph-spaces underneath the capsule.

Pyelography, therefore, should be carried out with the greatest caution. Where it is absolutely indicated, Kümmell's method is to be preferred.

KNORR.

Fowler, H. A.: Closed Tuberculous Pyonephrosis. *J. Am. M. Ass.*, 1914, lxii, 12.

By Surg., Gynec. & Obst.

While this condition would appear from the literature to be comparatively rare—Smirnow finding but twenty-four cases reported—it is probably more common than reports show. Earlier cases studied without the aid of the cystoscope or ureteral catheter were rarely diagnosed before operation. Even by the newer methods pre-operative diagnosis

may be very difficult; there may or may not be a lumbar or abdominal tumor, depending on whether renal distension is present or the atrophic organ has become fibrous and much contracted.

The author describes the pathology of the condition, and the effects on the perirenal tissues, in which there is usually more or less fibrous deposit, obscuring anatomical landmarks. Occasionally secondary abscess formation occurs—in one case simulating psoas abscess. Smirnow divides the cases into the following three clinical groups:

1. In the first, the bladder is tuberculous; the ureter on the diseased side is impermeable; and in the region of the diseased kidney there is a large pyonephrotic sac. The diagnosis is easy.

2. In the second, the bladder is normal; one ureter is impermeable and in the corresponding kidney region there is a tumor. Diagnosis is possible from the history, etc.

3. In the third, there is advanced tuberculosis of the bladder; ureteral catheterization is impossible; an enlarged kidney may be palpated, which may be healthy and only hypertrophied, while the diseased kidney is atrophic. Diagnosis is possible by exploratory incision. The author does not mention the possible value of radiography in some of these conditions.

He reports a unique case in which the symptoms dated back 12 years. Finally, an abscess pointed in the left post-axillary line and just below the costal margin. Drainage of this gave temporary relief, but subsequently the diagnosis of closed pyonephrosis was made. Upon operation, the process was found to have penetrated the pleura through the diaphragm, causing a tuberculous empyema—this cavity had been drained at the first operation. The kidney was found to be converted into a large pyonephrotic sac with little renal parenchyma remaining. Although, in the removal of the pyonephrotic sac, no damage was done to the peritoneum or intestine, a fecal fistula developed in the wound four days later, and the patient died ten days after operation.

While the urine had become clear and the bladder healthy, although contracted, the author points out that "autonephrectomy" failed to cure the disease and properly emphasizes the danger of trusting to nature to cure renal tuberculosis. Not only had the tubercular process involved the diaphragm and finally the pleura, but it had also invaded the peritoneum and intestinal wall. The pressure of a movement induced by a laxative caused the unsupported bowel wall to give way and the fistula resulted.

HORACE BINNEY.

Baar, G.: Stricture of Ureter Simulating Nephrolithiasis. *Interst. M. J.*, 1914, xxi, 37.

By Surg., Gynec. & Obst.

Baar reports the following case because of the rarity of inflammatory strictures of the ureter. A traveling salesman, aged 40, complained of frequent attacks of colicky pain in the right lumbar region,

radiating along the iliac crest into the glans penis, with tenesmus and meteorism of the abdomen. Such attacks would come frequently, two or three times a week, after any physical exercise, and could be relieved only by morphine. A year ago his physician, suspecting a stone in the right kidney, made a kidney incision; but did not find any stone and the attacks continued unchanged.

After close observation for three weeks the author concluded that the patient suffered from oxalic acid gravel in his right kidney. He was put on Cantani's diet, sodium bicarbonate and lithium carbonate effervescent, and a hot bath every day. Three months later he had another attack of renal colic with tenesmus; one night, while trying to void urine, the stream suddenly stopped, and after a strange sensation as if some foreign body had passed the urethra, the flow started again.

Two years later, while the author was absent abroad, during one of the patient's attacks, a prominent surgeon diagnosed the case as appendicitis and removed the appendix. After recovery from the operation, the patient continued to suffer the same painful attacks. On reexamination the shreds found in the urine contained pus-cells with characteristic groups of gonococci. The prostatic secretion showed many pus corpuscles with gonococci.

Six weeks later the right kidney was catheterized, and the urine was found to contain many intracellular gonococci; the urine from the left showed neither pus-cells nor gonococci. The diagnosis was then changed to the following: Pyelitis dextra gonorrhœa, cystitis gonorrhœa, prostatitis gonorrhœa.

Within the next ten months the patient received forty injections of 50 ccm. of a 20 per cent protargol solution into the right renal pelvis. The renal colics ceased from the time of the first kidney catheterization and have not reappeared. Inasmuch as the urine still shows pus and intracellular gonococci, there is not a *restitutio ad integrum*, but the author states that he has effected a practical cure by reducing the inflammation of the ureter, which was producing the clinical picture of renal colics, and which had caused the patient intense suffering for years previous.

LOUIS GROSS.

Babcock, W. W.: A Note as to the Recognition of the Ureter; Report of a Case of Anastomosis of the Ureter into the Appendix. *Surg., Gynec. & Obst.*, 1914, xviii, 119. By Surg., Gynec. & Obst.

The author points out that the normal or dilated ureter may be absolutely differentiated from other structures by characteristic peristaltic movements that are observable through the overlying peritoneum. The peristalsis has even been observed in a ureter dilated to the size of the ileum. The periureteral plexus of blood-vessels marks the movements and the ureter is seen first to slide upwards under the peritoneum, and then, after a momentary pause, downwards for several millimeters. This

trombone movement is usually observed, but in some patients, the associated contraction wave is more marked. About one-half minute may elapse between the movements, but they may be excited almost at will by stroking the tube. They differ from peristaltic intestinal movements in character, periodicity, and reaction to irritation, and serve to absolutely differentiate the ureter. The observation may be easily verified by exposing the structures over the sacro-iliac synchondrosis during an abdominal operation.

The uretero-appendicular anastomosis was extra-peritoneal, the appendix having been pulled through a small opening in the peritoneum. The left ureter was imbedded in the rectum. The patient, who had an advanced carcinoma of the bladder, died two days later.

BLADDER, URETHRA, AND PENIS

Arcelin: Röntgen Diagnosis of Vesical Calculi
(Diagnostic radiographique des calculs vésicaux).
Cong. de l'ass. franc. d'urolog., Paris, 1913.
By *Journal de Chirurgie*.

Arcelin shows that the röntgen diagnosis of vesical calculi is particularly difficult because of the opacity of this region to the X-rays. The plate may show a shadow in the bladder region, but there is nothing characteristic about it. It has to be identified by clinical and instrumental measures. If the plate does not show a shadow, there may, nevertheless, be a calculus. In practice, about 50 per cent of vesical calculi escape radiographic demonstration. Accessory methods, such as injection of water, oxygen, and collargol, are very difficult to use. Aside from these limitations, röntgen examination has its advantages. In patients with stricture of the urethra, diverticula of the bladder, etc., exploration by X-rays may show calculi that could not be diagnosed by any other means.

J. DUMONT.

Luetscher, J. A.: Acute Cystitis Due to the Bacillus Aërogenes Lactis. *J. Clin. Research*, 1914, vii, 1.
By *Surg., Gynec. & Obst.*

The author reports two cases of bacillus aërogenes lactis infection, the first a cystitis in a woman of 28, two months pregnant, and the second a urethritis in the woman's husband.

In the case of cystitis the symptoms were acute, confining the patient to bed and showed considerable tendency to recurrence, but cleared up in four weeks. Catheterized urines taken on the sixth and ninth days showed pure cultures of the bacillus aërogenes lactis.

In the second case, the urethritis developed four days after the acute symptoms appeared in Case I. The discharge was yellowish, watery, and acid, and contained a few pus-cells, but no gonococci. Frequency of urination with tenesmus and a temperature of 103°, with prostration, headache, and nausea, developed, subsiding by the tenth day. It was fol-

lowed by an acute epididymitis on the twelfth day with a temperature of 104°, terminating in recovery on the twenty-ninth day.

A blood culture on the sixth day and a Widal test on the ninth day were negative. Catheterized urines on the ninth and fourteenth days showed pure cultures of bacillus aërogenes lactis.

The organism was an encapsulated bacillus with rounded ends, which did not stain by Gram's method. Colonies on agar plates and agar slants were about one millimeter wide and of a bluish opalescence; on potato there was a heavy yellow viscous growth; milk was coagulated in twenty-four hours with acid production, and in a fermentation tube with saccharose solution there was considerable gas formation.

The morphology, capsule formation, absence of motility, rapid coagulation of milk, and gas formation leave no doubt as to the identity of the organism. The author calls attention to the possibility of the first case being regarded as due to the colon bacillus and the second case as a gonorrhoea, without careful bacteriological study. H. G. HAMER.

Solowij, A.: Technique of Operation on Large Fistulæ of the Bladder, by the Abdominal Route (Zur Technik der Operation schwieriger Blasen fisteln auf abdominalem Wege). *Ztschr. f. gynäk. Urol.*, 1913, iv, 131.

By *Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.*

Solowij uses Dittel's method of operating by laparotomy on large fistulæ which cannot be closed through the vagina. He splits the uterovesical fold and thus reaches the fistula and sutures it. Recently he has extirpated the uterus from above and finds that this procedure makes the operation much easier. Hæmorrhage is thus decreased and the approach to the fistula enlarged.

One great advantage of the operation is the possibility of thorough drainage through the vagina, as in this way the danger of urine infiltration and infection is avoided if the suture does not hold. If the fistula is densely adherent to the os pubis it must first be loosened with a rasp. A detailed history of a case and the operation is given.

KNOOP.

Lower, W. E.: An Improved Method of Removing a Diverticulum of the Urinary Bladder. *Cleveland M. J.*, 1914, xiii, 1. By *Surg., Gynec. & Obst.*

From his experience, the author believes that if a diverticulum is converted into a solid or semi-solid mass its removal is more easily accomplished. He reports a case of diverticulum of the urinary bladder, in which after exposing the bladder, collargol solution, which had been previously injected into the diverticulum, could be seen issuing from its opening. Through this opening was packed about one yard of one-inch strips of gauze. With the fingers within the bladder, its upper portion was pulled forward and dissected from the peritoneum; when the neck of the diverticulum was brought into view, it



Fig. 1. (Bredin.) Bredin's new urethrotome, showing knives; surrounded by a filiform catheter. A set screw operated by the thumb sets free the knives.

was divided entirely from the bladder, which was held away laterally by retractors. The ureter was necessarily divided by the incision which freed the diverticulum, and it was temporarily tied off to prevent the escape of urine. The gauze-filled diverticulum was then carefully dissected away from the surrounding structures and removed. The divided ureter was then transplanted into the bladder through the opening made by resecting the diverticulum.

H. L. SANFORD.

Bredin, W. W.: A New Urethrotome. *N. Y. M. J.*, 1914, xcix, 126.

By Surg., Gynec. & Obst.

Bredin's new instrument, shown above, is said to be applicable to all calibers and all parts where strictures are usually found. The instrument consists of a main shaft, in which the knife rod moves forward and backward, and a guide which terminates in a No. 9 French catheter with a filiform tip. The bulbous end of the guide conceals the knives, and screws onto the main shaft — the knives, when in action, operate through the grooved portion of the guide. The instrument is easily taken apart for sterilization. With this instrument, which anyone can use with safety, the author states that internal urethrotomy is no longer a bungling uncertainty.

S. WM. SCHAPIRA.

Kolischer, G.: Clamp Resection of the Urinary Bladder. *J. Am. M. Ass.*, 1913, lxii, 296.

By Surg., Gynec. & Obst.

The diagnostic feature of this case consisted in inverting the vesical vertex by abdominal finger pressure. In this way a central incrustated ulcer was shown to be the top of a sessile tumor of apparent malignancy. The location of this growth suggested its removal by clamping off the top of the unopened bladder, previous to the excision of the vertex carrying the tumor. The precaution of having had a cystoscope introduced in order to control the application of the intestinal clamp used proved to be superfluous, because palpation of the exposed bladder was sufficient to outline the base of the tumor and the surrounding infiltrations. The vertex of the bladder was clipped off with the clamp in place, and the first suture line inserted under the same conditions. Thus the resection was completed without any chance of disseminating cancerous particles through the interior of the viscus.

After removal of the clamp, a superseding suture-line was inserted and the abdominal wall completely

closed. The after-treatment consists of catheterization at regular intervals.

The case proved a technical success, the healing being interrupted only by the appearance of an abdominal fistula that closed inside of ten days. Cystoscopy undertaken three months later showed normal conditions. The capacity of the bladder was 120 ccm.

HARRY A. KRAUS.

GENITAL ORGANS

Pasteau, O., and Degrais: The Employment of Radium in the Treatment of Cancer of the Prostate. *Canad. Pract. & Rev.*, 1913, xxxviii, 703.

By Surg., Gynec. & Obst.

The authors divide the surgical treatment of cancer of the prostate into two headings:

1. *Palliative treatment*, which consists chiefly of suprapubic cystotomy, instituted for the purpose of relieving the severe cystitis. The authors believe that the same principles which cover enlargement of the prostate in any other direction are applicable to those of cancer. They may have similar retentions, similar infections, etc. There is nothing specific in the treatment of cancer of the prostate and the palliative treatment consists in treating the symptoms.

2. *Curative treatment by total prostatectomy* is of particular interest in cancer of the prostate. The operation is long, the technique difficult, the mortality great, and recurrence frequent. The writers were among the first to employ the use of radium in these cases.

The technique of treatment is described as follows: The surgical routes may be used for the purpose of applying radium to the prostate, as, for instance, through the perineum.

2. The route through the bladder, after a hypogastric incision, is particularly valuable in cases where it is necessary to do a suprapubic cystotomy for relief.

3. The natural routes are: (a) Per rectum, in which the whole of the posterior surface of the prostatic lobes can be exposed, and it is then easy to irradiate the whole of the posterior portion of the gland. The applications should be made chiefly on the surface by means of radium plaques. Radium tubes may also be used, but not so easily owing to the fact that it is necessary to cover the posterior portion of the tube with screens in such a way that the rays can only act on the anterior portion. (b) The route through the urethra leads directly to the prostatic tissue. The tube, which is completely surrounded by glandular tissue, comes in contact with the lateral lobes and by being further introduced it may also reach the median lobe.

The authors believe that the urethra and rectum may also be used at the same time for treatment, thus making a "cross-fire" on the prostate. They state they have used the intraprostatic application of radium in treating fifteen patients, but few of these patients were sufficiently persevering in their

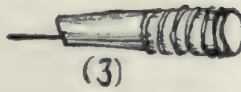


Fig. 1. (Pasteau and Degrais.) Longitudinal section of a catheter coudé, with a single orifice, with tube of radium in position.

Fig. 2. Longitudinal section of catheter coudé with two orifices, and radium tube in position.

Fig. 3. Rolling of the metallic wire which is fixed around the circumference of the catheter.

Fig. 4. (Pasteau and Degrais.) Diagram intended to show that the radium tube cannot be placed in good position in the rubber catheter if the latter has already been introduced into the posterior urethra.

Fig. 5. Tube of radium supplied with a metallic wire which keeps it in position and fixes it in the catheter.

treatment to obtain any results; in fact, the authors state that lack of persistence is the greatest hindrance to the success of this method.

The authors do not describe the manner in which they put the radium into the prostate, except to say that they consider it a poor method. They believe that the use of the radium tube in a catheter offers the best method of treatment. The authors cite the following case, giving the times of application for the radium and the method:

The patient, a man aged 57, suffered in November, 1908, and later in April, 1909, from slight hæmaturia at the beginning of micturition. In consultation with Nitch, surgeon at St. Thomas's Hospital, London, cystoscopy was performed by the authors in order to verify a diagnosis of an infiltrating and inoperable tumor of the bladder. A superficial and irregular tumor was found, not broken down, covered by non-ulcerated mucosa, which was, however, abnormally red. This tumor, the margins of which were fairly well defined, formed a marked projection more than half a centimeter in thickness. It was obliquely elongated, and extended from the margin of the neck on the right to the level of the right ureteral orifice. It was not pedunculated, but raised the mucosa *en bloc*; in its contour there was no change from the normal aspect of the vesical mucosa, otherwise the bladder was everywhere normal. The urethral orifices were normal, though the right appeared to be rather wider than the left, which was doubtless due to the mucosa being slightly thicker at that point, and to a certain disturbance of venous circulation. Finally cystoscopic examination demonstrated the existence of small rounded prominences on the right lateral margin, and a little more deeply in the tissue of the bladder at this level, for a length of about one centimeter. These prominences were regular and smooth.

A diagnosis was made of prostatic neoplasm,

which had extended into the vesical cavity, and after having completely emptied the bladder the rectum was palpated.

The prostate was voluminous, but hard, nodular, irregular, fixed, and thickened in its right lobe, and at that point less easily defined. There was no engorgement of the ganglia.

The first series of application of radium was made on October 2d, 5th, 11th, and 19th, 1909. At the first séance a tube of 2 cgs. was inserted, remaining in position for two hours; in the subsequent séances a dose of 5 cgs. was given.

On October 16, 1909, after the first three applications, cystoscopic examination showed that there was already marked diminution in the size of the vesical tumor.

Another series of applications was made on December 23, 1909, and on January 2d, 6th, 11th, 15th, and 20th, 1910.

A urethroscopical examination made by Goldschmidt's instrument on December 18th showed that there was no ulceration and but little redness, except on the right side. On this side the wall was apparently elevated by fairly regular and rounded lobulations, one of which manifestly corresponded to a prominence which was seen on the margin of the neck of the bladder on the right side.

The author's conclusions are as follows: The cases reported apparently showed with certainty that the action of radium has been obvious in cases in which the clinical diagnosis of cancer has been made by competent surgeons and confirmed by examinations conducted in the best possible manner, but in many of these cases absolute diagnosis of cancer was practically impossible and was lacking. They speak of two cases where inguinal glands were involved and claim that they showed marked diminution in size after the treatment of the prostate with radium. Quoting direct, the authors state:

"Since, on the one hand, curative operative treatment of cancer of the prostate is always dangerous and usually illusory, and since, on the other hand, treatment by application of radium, is without risk, and may possibly be really useful, there should be no hesitation, when a cancer of the prostate is diagnosed, in giving repeated applications of radium according to one of the procedures previously referred to.

"It may be said that we have obtained good results only in patients who were not suffering from cancer, but a consideration of the cases which we have reported is in favor of the belief that this is not so.

"Speaking as clinicians, we will say no more than this: If it is true that our patients were not actually suffering from cancer of the prostate, it is none the less true that this diagnosis was the only one that could be made in these cases, and since no curative operation could be undertaken treatment by radium was indicated. In short, in all cases in which the presence of cancer of the prostate is suspected radium treatment should be carried out. If it does not effect a complete cure it alters the condition of the tumor to such an extent that prostatectomy can be undertaken with benefit and without risk. It remains only to determine, from our personal experience, a few points in relation to the technique. For the sake of simplicity we are now in the habit of employing only intraprostatic applications by natural routes."

In the selection and preparation of the apparatus the authors use simply a soft gum elastic catheter, not the India-rubber catheter, or, as we have called it, the coudé catheter. The radium tube is passed into the catheter by a wire and held in front of the hole in the catheter. The authors prefer a single hole catheter, but one with two holes may be used. The catheter is pushed in until fluid runs from the bladder, after which it is withdrawn, thus remaining exactly in the prostatic portion. The radium tube is pushed to the neck of the catheter and allowed to remain in that position. It is always introduced before catheterization and before a catheter is passed into the bladder. The radium tube is fastened to the catheter at a certain point by means of a wire that is wound around the catheter, preventing it from slipping up and down in the tube.

The authors believe that only cases which have beginning cancers can be successfully treated with radium.

A number 16 or 17 coudé catheter should be used, and it must be ascertained whether the urethra will admit this catheter easily. The urethra should be sterilized as before catheterizing.

If the patient suffers from urinary disorders, emptying and irrigation of the bladder is indicated. Good results are obtained by allowing the retention catheter to remain in position for several days before any treatment is begun. If the urine is clear great care should be employed to prevent infection, and the operation should be regarded with as much seriousness as an abdominal operation.

The question of anæsthesia does not arise—even local anæsthesia is usually not necessary. The duration of applications depends upon the reactions which follow the application.

It is necessary that a sufficient amount of radiation be produced: the applications of radium should be made every three, four, or six days, according to the patient's endurance. The duration should be from two to four hours; the dose from 2 to 5 cgs.; the thickness of the screen from five-tenths to three-tenths of a millimeter. After five or six applications it is advisable to suspend treatment for three or four weeks. Constant study of the condition of the prostate by means of the cystoscope and urethroscope, rectal palpation, etc., should govern the frequency of repetition and the continuation of the treatment.

Intraprostatic applications of radium are followed either by general or local reactions. Among the symptoms which are common to the applications of radium may be mentioned lassitude, fatigue, and drowsiness. These symptoms appear either immediately or a few hours after the application and persist from a few hours to three days, and may necessitate rest in bed for 24 hours. This condition is more marked following prolonged and intense applications, although in subsequent séances it may disappear entirely.

Local irritations in the course of applications may appear at the same time due to a spasm of the urethral sphincter. Frequency of micturition may be said to be the rule, caused by the radium no doubt, and also by the presence of the catheter in the urethra. More or less marked symptoms of cystitis, due, no doubt, to infection, may also appear.

Hæmaturia or urethral bleeding are very exceptional.

The authors have seen the evacuation of a mucopurulent débris persisting for 8 or 10 days. This in some cases obstructed the urine and necessitated aspiration.

The authors are of the opinion that radium should not be recommended too often, nor séances at too frequent intervals; under what particular class of cases it is difficult to exactly determine, but the radiation should be continued as long as endurable.

The authors conclude that radium certainly exerts an influence upon cancer of the prostate.

Radium may be used by introducing it into the gland: (1) By operation, by the ordinary surgical routes of access; that is to say, the perineum and the bladder. (2) Without operation by the natural routes, more especially the rectum or urethra, which permit of reaching the center of the tumor.

By this method of treatment a prostate which is primarily inoperable may be reduced to such an extent that prostatectomy may be performed without danger. In other cases it may result in suppression of hæmaturia, and sometimes even in complete disappearance of the tumor and of certain masses of ganglia.

A. C. STOKES.

Gardner, J. A., and Simpson, B. T.: The Relation of Multiple Adenomata to the Etiology of the Enlargement of the Prostate Gland. *Surg., Gynec. & Obst.*, 1914, xviii, 84.

By Surg., Gynec. & Obst.

Gardner and Simpson have studied one hundred prostate glands, ranging in age from six months to ninety years. These glands were obtained from autopsy and operation. The authors find that prostates between the ages of forty and sixty years contain isolated adenomatous nodules, while those between sixty and eighty years are either normal, atrophied, or enlarged due to multiple adenomata. They agree with Chevassu that these adenomata may spring from any portion of the prostate gland. Having found adenomatous nodules in the so-called surgical capsule, they cannot agree with Tandler and Zuckerkandl that prostatic enlargement always begins in the middle lobe. Their conclusions are: "As far as our research with enlarged prostates reaches, the condition in the majority of cases is caused by the growth of multiple adenomata."

Morton, H. H.: Prostatectomy. *Med. Times*, 1914, xlii, 14.

By Surg., Gynec. & Obst.

The author, after presenting two cases of suprapubic and perineal prostatectomy, adopts Guyon's division of hypertrophied prostate into the following three stages: (1) Premonitory, in which the symptoms are difficulty in starting the flow of urine; disturbance of the stream; frequency of urination, especially at night. (2) Insufficiency of the bladder, which is characterized by partial retention of urine. (3) The period of incontinence, during which the bladder may hold two or three quarts of urine, and the patient complains of involuntary escape of urine.

To diagnose these three stages, the author advises the following systematic examination:

1. Palpate the prostate through the rectum.
2. Measure the quantity of residual urine.
3. Inspect the prostate with the cystoscope.

As to choice of operation, the author thinks the anatomical formation of the prostate decides the choice. In his opinion the causes of death after operation are in the following order: (1) Suppression of urine; (2) shock; (3) hæmorrhage; (4) pulmonary embolism; (5) gangrene of suprapubic wound and general sepsis. The general mortality in all non-selected cases in big hospitals, he thinks, is about 10 per cent, and in selected cases about 5 per cent.

S. WM. SCHAPIRA.

Garraro, N.: Symptoms of Prostatitis, without Enlargement of the Prostate (Sur les "prostatites sans prostate"). *Clin. chir.*, 1913, xxi, 2145.

By Journal de Chirurgie.

After having discussed the "prostatic bladder" and the theories given to explain it, the author reports four cases of his own with symptoms of prostatitis but without hypertrophy of the prostate. Cystoscopical examination showed the neck of the

bladder deformed by nodules of prostatic adenoma. After the enucleation of these nodules by Freyer's method, normal micturition was re-established.

The author concludes that before diagnosing bladder troubles as due to prostatitis, all central or peripheral nervous lesions which might give rise to similar symptoms should be eliminated, as well as the various causes of stenosis and retention, and that all methods of examination known to modern urology should be practiced. A cystoscopical examination, especially, should be made, as it gives excellent results, giving a view of the neck deformed by very small adenomatous nodules. Freyer's operation is effective in such cases.

The nodules removed from Carraro's four patients were adenomata within the sphincter, developed at the expense of the glands surrounding the neck.

PIERRE FREDET.

Rochet, V., and Thévenot, L.: Removal of the Testicle, the Vas Deferens, and the Seminal Vesicle, for Tuberculosis of Those Organs (Ablation du testicule, du canal déferent et de la vésicule séminale correspondante au cours de la tuberculose de ces organes). *Cong. de l'Ass. franc. de chir.*, Par., 1913, Oct.

By Journal de Chirurgie.

Rochet and Thévenot carried out this operation on a young man of 19. A cold abscess of the epididymis had been incised, and a fistula had remained. On his admission to the hospital he had an extensive induration along the whole length of the vas deferens and a very marked increase in the size of the right seminal vesicle; the lesions being strictly limited to these organs, extensive resection was decided upon. At the first operation the seminal vesicle and the abdominal part of the vas deferens were removed through a Pfannenstiel incision; at the second one the testicle and the inguinal part of the vas deferens were removed, the latter procedure being by the scroto-inguinal route, while the first was by laparotomy, the posterior surface of the seminal vesicle being dissected off in a manner analogous to Wertheim's operation for uterine cancer. J. DUMONT.

MISCELLANEOUS

Barratt, J. O. W., and Yorke, W.: The Production of General Symptoms in Hæmoglobinæmia. *Brit. M. J.*, 1914, i, 235.

By Surg., Gynec. & Obst.

Barratt and Yorke show conclusively that the symptoms coming on after the injection of laked blood-cells are due, not to the dissolved hæmoglobin, but to the stroma of the red blood-cells themselves.

Rabbits that received the stroma solution intravenously died practically instantly, but those that received the hæmoglobin solution suffered no harm. The effect of the injection of laked cells upon the coagulation of the blood was not certain: sometimes it seemed to prolong the coagulation time, while at other times it seemed to shorten it. The cause of death in these animals was due to the intravenous formation of fibrin in the blood-vessels of the lung.

V. D. LESPINASSE.

SURGERY OF THE EYE AND EAR

EYE

Claiborne, J. H.: A Case of Embolism of a Branch of the Retinal Artery. *Virg. M. Semi-Month.*, 1914, xviii, 503. By Surg., Gynec. & Obst.

The following case illustrates a one-sided central scotoma, which the patient is able to ignore, though he is a professional and literary man and uses his eyes constantly:

A gentleman of medium height, aged 68, high strung, nervous, but healthy, and of abstemious habits, felt a large blur, almost totally obscuring his vision, suddenly come over his left eye while he was going down stairs one morning after breakfast. He had gone to bed early the night before, and had not been guilty of excess of any description, nor any unusual muscular actions antecedent to the event, neither had he strained at stool before its occurrence.

The blur became better during the day, but later on became worse. The author saw him on the morning of the day on which it happened and observed the following condition: The left pupil was slightly larger than the right, but reacted normally, directly, consensually and in accommodation; the tension was normal; media clear; optic nerve inflamed, slightly blurred above; the lower central vein as it plunges into the nerve head was constricted; upper vein enlarged and almost lost to sight in a slight cloud just above the disk; directly above the upper edge of the nerve a branch of the upper vein as it runs towards the macula where it crosses an artery was much narrower; the veins in general appeared to be rather full and dark; right vision 23/30; left vision 23/200 plus, eccentric fixation; heart sounds normal, but action slightly rapid; kidneys found to be normal; the field of vision showed a perfectly black scotoma in the center.

Two years and seven months after the first observation about the same condition was present in the fundus as at the former observation—absolute central scotoma somewhat irregular in form and about one-fourth the size of the original. The patient is in excellent condition, has never resumed the use of tobacco or coffee; is undisturbed in reading or in other use of his eyes by the existence of the blind spot. When, however, his right eye is covered, he is only able to see the 200-foot letter, with imperfect perception of the 100-foot line, while he fixes the letters centrally. He is unable to read with the affected eye alone.

The fact that the capillary network is lacking at the point of acute vision has long since been established, Leber, Becker, Gurlach, Reuse, Ayres, and Mayerhausen agree that the fovea is devoid

of retinal blood-vessels, while the remaining part of the macular region is richly supplied. Mayerhausen estimates the square area of the macula at 2,356 mm., of which 2,205 are very vascular, while the difference between these figures represents the non-vascular tract. According to the same observer, the vessels of the macular region terminate about .137 mm. from the edge of the fovea.

In view of these things, it is not unreasonable that embolic clogging of the circulation of the vessel feeding this area, however small the embolism, may produce a scotoma entirely involving the macula region, including the fovea. The fact that this patient can see the top letter of the card in looking at it, and can see none of the other letters below, would tend to show that the upper region rather than the lower portion of the macula is effected. This would be consistent with the observation of the constricted blood-vessel.

A diagnosis of embolism of the retinal central artery, partial or complete, may be made by the ophthalmoscope alone; but sometimes it is difficult to do so, owing to the uncertainty in picking out the exact blood-vessel obstructed. The field and the history of the case should always be taken into consideration and are important factors in fixing the diagnosis.

The great congestion of the veins in this case, which was observed on the first examination, led the author to the view that the process was a venous one, probably a thrombosis at the nerve head, but the subsequent developments, the central scotoma, and the constriction of all three temporal arteries, more particularly the superior temporal one, shows that it was a case of embolism of the latter artery—in short, a partial embolism. Moreover, he has noted in cases of thrombosis that the obscuring of vision does not come on as suddenly as in embolism, and in the nature of things this should be so. He has noticed likewise in embolism, both partial and complete, that there is frequently a great enlargement of the veins, particularly in complete embolism. It is not improbable that some portion of the embolus as it passed into the retina at the porous opticus stopped there and impeded the outflow of the venous blood, thus producing distended veins. The distention of the veins is naturally more noticeable than a slightly constricted artery; hence, the idea may be conceived at first that the process is a venous one. It is interesting to note that in the case noted the size of the scotoma is now very much less than it was at the beginning, but it is nevertheless large enough to interfere with distant central vision and to prevent the patient from reading with that eye, though the peripheric field is and has been normal.

Exact diagnoses in the background of the eye are difficult to make, owing to its limited area and the intimate connection between the elements of which it is composed; hence all factors should be considered and each given its true value.

Stephenson, S.: A Case of Brawny Scleritis. *Proc. Roy. Soc. Med.*, 1913, vii, Sect. Ophth., 1.
By Surg., Gynec. & Obst.

The case reported is that of a carman, 76 years old. He gave a negative general history and a Wassermann proved negative; teeth were in bad condition. The left eye had become inflamed without pain or known cause. The bulbar conjunctiva above the horizontal meridian was brownish red in color with dilated vessels running over it. Early this area was oedematous, later more brawny in appearance. A patchy, sclerosing keratitis developed around the margin of the cornea, less marked above. The vision recorded early was 3/24. The treatment consisted of salicylates, potassium iodide, and a boric wash.

In the discussion, tenonitis, solid oedema of the conjunctiva, and malignant tumor of the choroid were suggested as other explanations of the condition.

Davies, D. L.: Modern Treatment of Lachrymal Obstruction. *Lancet*, Lond., 1913, clxxvi, 26.
By Surg., Gynec. & Obst.

Davis believes probing or the use of styles unsatisfactory; extirpation he considers an advance, because shortening the treatment and preventing suppuration, but mutilating and therefore unsurgical. He has used the Toti operation in which the sac is exposed, its wall removed, also the inner wall of the lachrymal fossa and the two openings approximated, in ten cases, with perfect success in seven and improvement in three. He concludes by expressing the hope that there will be more development along this line of treatment, as he believes it will yield excellent results. EARLE B. FOWLER.

Maynard, F. P.: A Modification in Extirpation of the Lachrymal Sac. *Indian M. Gaz.*, 1914, xlix, 7.
By Surg., Gynec. & Obst.

The operation described in this article is a modification of that developed by Kuhnt. The inner wall of the sac is dissected outward, together with the periosteum, and followed down to the nasal duct. This is cut as low as possible and the upper end grasped with a fixation forceps. The sac is then freed upward, drawing it up and inward; the canicular openings are cut; whatever remains of the internal palpebral ligament is severed and the fundus freed. The author considers this the most satisfactory sequence. EARLE B. FOWLER.

Harman, N. B.: Tumor of the Choroid. *Proc. Roy. Soc. Med.*, 1913, vii, Sect. Ophth., 8.
By Surg., Gynec. & Obst.

The patient, a woman aged 46, reported gradual failure of vision in the left eye over a period of three

months, becoming almost complete three days before examination. The ophthalmoscope revealed a globular detachment above the disk with normal fundus reflex below and above. There were numerous hæmorrhages around the disk, tension was normal, and there was an absence of inflammatory symptoms. Enucleation was advised.

EARLE B. FOWLER.

Hansell, H. F.: Some Further Experiences in the Extraction of Immature Cataract, by the Homer C. Smith Method. *Med. Rec.*, 1914, lxxxv, 108.
By Surg., Gynec. & Obst.

Hansell reports two of his last five cases on which he performed an extraction by the Homer Smith method. In both cases the cataract was immature, but vision was reduced to less than 20/200 in both eyes. A preliminary iridectomy was performed; at a later date a needle-knife was thrust through the cornea and a cut made in the anterior capsule and underlying lens cortex. Twenty-four hours later an extraction was done. In these two cases 20/30 vision or better was obtained. EARLE B. FOWLER.

Chatterton, E.: Case of Double Tubercular Iritis. *Proc. Roy. Soc. Med.*, 1913, vii, Sect. Ophth., 5.
By Surg., Gynec. & Obst.

Chatterton reported a case first shown 8 months before. At that time both irides were thickly studded with yellowish gray, vascular nodules; posterior synechiæ and vitreous opacities were present in both eyes. R. V., 6/24; L. V., 6/36. Intra-ocular hæmorrhage in the left occurred some weeks later. Repeated paracentesis of both anterior chambers was done and tuberculin given. All nodules have disappeared. R. V. 6/12 and J 10; L. V., shadows. EARLE B. FOWLER.

Cunningham, A. T. R.: Report of a Case of Gradual Occlusion of the Common Carotid Artery in the Treatment of Pulsating Exophthalmos. *J. Am. M. Ass.*, 1914, lxii, 373.
By Surg., Gynec. & Obst.

The author reports a case in which a clamp was used to cause automatically a gradual occlusion of the common carotid in a case of pulsating exophthalmos.

The condition occurred in a man 39 years old, coming on rather suddenly in the right eye two months after a blow over the left cheek, and continuing for four years. A sudden attack of unconsciousness brought the case to operation. The clamp used was one described by Neff and consisted of two blades, hinged, the compression force being obtained by a rubber band. This clamp was applied to the right common carotid, the tension being light enough to permit a pulsation to be felt distally. The wound was closed over the clamp and pulsation had ceased in four days thereafter. Two months later the clamp was removed and it was found to have cut its way entirely through the artery.

EARLE B. FOWLER.

Roe, J. O.: Orbital Abscess, from Infection Through the Ethmoid. *N. Y. M. J.*, 1913, xcviil, 1194.
By Surg., Gynec. & Obst.

The author's first case was a boy 17 years old; there was marked œdema around the right eye and orbit, with a cellulitis; raising of the upper lid, vision blurred; temperature 103° F.; intense pain back and above the eye. It was doubtful whether it was a frontal sinusitis with a subperiosteal abscess or an infection to the orbit through the ethmoid. Upon nasal examination, there was a mucopurulent discharge from the ethmoid region. The anterior end of the middle turbinate was removed; the posterior ethmoid cells and posterior portion of the orbital plate removed; the pus was drained and the patient made a good recovery. The second case was a male 19 years old. There was swelling in both eyes, the patient becoming delirious and then comatose; the temperature 103° F. The diagnosis was an orbital infection with abscess or a meningitis. The same operation was done as in the first case, following which the blood and pus came away. The pathologist's report was orbital phlegmon and infectious ethmoiditis. The author compares the advantages of the orbital and intranasal route, and states his belief that the latter route is the best, safest, and most direct. His special cutting forceps, cutting at right angles, are made for right and left.

He locates the posterior wall of the nasal cavity, through its entire extent from the cribriform plate to the fasciolar process with a slender, thin, flat steel probe; this he lays stress upon, to obviate the possibility of entering the cranial cavity.

L. J. GOLDBACH.

EAR

Wood, J. W.: Direct Examination of the Eustachian Tube and Nasopharynx. *Med. Press & Circ.*, 1914, xcviil, 86.
By Surg., Gynec. & Obst.

Based upon his findings in the study of 650 cases by the direct method with the Holmes nasopharyngoscope, the author has classified the disorders of the eustachian tube and finds the inflammatory conditions most common and never associated with normal hearing.

Acute salpingitis is the most important condition affecting the eustachian tube, as practically all cases of chronic middle ear catarrh originate in catarrhal conditions affecting the nasopharynx and the mouth of the eustachian tube.

The author concludes from his findings that in all cases of slight deafness in order to make a precise diagnosis it is of the greatest importance to make a routine examination of the post-nasal space with the nasopharyngoscope.

ELLEN J. PATTERSON.

SURGERY OF THE NOSE, THROAT, AND MOUTH

Dutrow, H. V.: Deformities of the Nasal Septum; and the Operation for Its Submucous Resection, with an Original Incision. *Lancet-Clin.*, 1914, cxi, 60.
By Surg., Gynec. & Obst.

Asymmetry of the septum was present in 77 per cent of 2,000 Anglo-Saxon skulls examined by Mackenzie, while Purcell found only 5 to 10 per cent deviated in 500 negroes. The author believes the most plausible theory of the causation of deviation to be found in the relative over-development and early ossification of the brain case in comparison with the bones of the face. Traumatism, of course, is a factor in a small percentage of cases. He divides all deviations into two classes: (1) Simple, and (2) those associated with overgrowth. Deviations are rarely seen in children under seven years of age, but reach their maximum development between the fourteenth and twenty-fifth years. Deviations should be corrected at any time when symptoms arise which can be traced to that source. These symptoms are: Nasal obstruction, headaches, reflex disturbances, deafness, and laryngeal troubles. A general anæsthetic is rarely necessary for the submucous operation for the correction of septal deviations—the only operation mentioned by the author. Local anæsthesia, after Freer's method, should always be used when possible, excessive hæmorrhage being thus avoided.

Dutrow advises, in going through the cartilage, to do so at an angle of thirty-five degrees instead of at right angles. It is easier to elevate on the opposite side with this incision and if button-holing follows, permanent perforation is avoided, as the two openings do not approximate. Reference is made to the occasional occurrence of sphenovomerine bullæ—accessory air-cells in the posterior portion of the septum. The operation should not be made a race against time with the chance of sacrificing useful mucosa to save a few minutes, for the patients stand this operation well and there is usually little shock. As a rule, the incision should be closed with sutures.

GEORGE M. COATES.

Hofer, G.: The Question of the Etiology of Genuine Ozena. *Univ. M. Rec.*, 1914, v, 11.
By Surg., Gynec. & Obst.

Hofer supports the theory of the etiology of the *coccobacillus fatidus ozenæ*, basing his claims upon a series of experiments by which he obtained the *coccobacillus fatidus ozenæ* in pure culture and from it prepared a vaccine, with which he treated selected cases presenting the cardinal symptoms of genuine ozena. The results were so remarkable that the author believes that the active immunization with the bacillus guarantees an absolutely favorable prognosis.

ELLEN J. PATTERSON.

ABSTRACTS OF SOCIETY PAPERS

AMERICAN SURGICAL ASSOCIATION

MEETING HELD AT NEW YORK CITY, APRIL 9-11, 1914

Mayo, W. J.: The Prophylaxis of Cancer. *Tr. Am. Surg. Ass., N. Y., 1914, April.*

By Surg., Gynec. & Obst.

Mayo states that all vertebrate animals suffer from cancer in situations affected by their habits or conditions of life leading to local lesions in the protective mechanism. He believes that we should look upon local lesions as an invitation to cancer without regard to just what the actual cause of cancer may be. The term precancerous should be limited to those conditions which clinically and microscopically cannot be said to be surely benign or surely malignant: the character of the cells are changed; they lack differentiation but as yet there is no infiltration of the surrounding tissue. This cellular change is found in the periphery of malignant growths and in conditions which have afterward developed malignancy. The local lesion is the invitation and the precancerous condition the probable acceptance.

He divides the sites of local irritation into three groups: (1) Congenital or acquired neoplasms, such as moles, warts, and benign tumors which may undergo malignancy; (2) trauma which strongly influences not only the development of sarcoma but of carcinoma; (3) chronic irritation, which he considers the most important of all the precancerous conditions whether the result of mechanical, chemical, or infectious agencies. Among the many examples cited are: The development of cancer in the mouth from betel-nut irritation in India, amounting to nearly half of all the epithelial cancers of the country; the development of cancer in local lesions produced by heat, as cancer of the lip from smoking; the "Kangri" sores following burns which form more than 50 per cent of all cancers in Kashmir; those cancers on the shins of locomotive drivers who have been exposed for years to the direct action of heat; cancers following chronic irritation due to different forms of radiant energy, X-ray, etc.; cancers following the local lesions due to infections, such as bilharzia of the bladder, treponema pallidum in keratosis linguae, nematodes in testicular tumors in horses and in gastric cancer of rats; and the "horn-core" cancer of cattle, due to the irritation of the ropes through the horns with which the cattle pull their loads. If the betel nut were not used in India and the Kangri basket in Kashmir, the cancers in these two countries would be reduced one-half.

The author calls attention to the importance of applying the evidences of local chronic irritation in the production of cancer to the solution of problems as regards the development of cancers on the internal mucous surfaces of the body; for example, cancer of the gall-bladder from gall-stone irritations and cancer of the stomach following gastric ulcer. Fifty per cent of cancers of the pelvis of the kidney are demonstrably superimposed on extensive renal calculi formation. Carcinoma of the appendix usually occurs in association with chronic obliterative processes. In the sigmoid and rectum the irritation in diverticula may have given rise to malignant disease. Cancer of the stomach occurs in 30 per cent of all cancers in civilized man, but is not common in primitive races or in lower animals. When cancer of a certain organ is found in only one class of individuals or one species, like betel-nut cancer and Kangri cancer, it means a single cause. Cancer of the stomach must be due to one cause, otherwise, the lower animals and primitive races would more often be affected. Something in the habits and customs of civilized man in connection with the cooking and preparation of food must be responsible for this large percentage of cancer of the stomach and a comparative investigation would be of value.

In conclusion Mayo says: "I would again call attention to the fact that pre-existing lesions play the most important part of the known factors which surround the development of cancer; that such precancerous lesions are produced by some habit or life condition which causes chronic irritation; that where cancer in the human is frequent, a close study of the habits of civilized man as contrasted with primitive races and lower animals, where similar lesions are conspicuously rare, may be of value; and finally, that the prophylaxis of cancer depends, first, on a change in those cancer-producing habits, and second, on the early removal of all precancerous lesions and sources of chronic irritation."

Bloodgood, J. C.: Cancer of the Tongue, Based Upon the Study of Over One Hundred Cases. *Tr. Am. Surg. Ass., N. Y., 1914, April.*

By Surg., Gynec. & Obst.

The author's study has led to some very remarkable conclusions. It has demonstrated that the failure to cure when cancer of the tongue is fully developed is due chiefly to the neglect to remove

the muscles of the floor of the mouth below the cancer.

The high mortality after operations for cancer of the tongue is due chiefly to the removal of the floor of the mouth without removing a section of the lower jaw.

The investigation has also shown that if a lesion of the tongue is subjected to immediate operation within a few weeks after the onset of the lesion, the chances of a permanent cure are good. In this stage it will usually be sufficient to remove the local lesion with a good margin of healthy tissue, and this removal should be done with the electric cautery. The center of the lesion should be preserved for microscopic study. When this is done the chances are that the lesion will still be benign, but even though the lesion prove microscopically cancer, the probabilities of a cure are almost 100 per cent.

In the past, surgeons have apparently removed too much of the tongue and have performed too extensive operations upon the glands of the neck. This is theoretically incorrect, because cancer of the tongue infiltrates through the floor of the mouth into the glands of the neck. Should the glands be involved and the floor of the mouth not be removed, little if anything could be hoped for from such an operation. The glands of the neck not being involved does not preclude infiltration of the floor of the mouth.

When the operation is performed in one stage it is impossible to remove the tongue, the floor of the mouth, and the glands, and then to close the opening in the mouth, unless a section of the lower jaw is also removed. If the former operation is done thoroughly the mortality is very high — almost 80 per cent — from primary or secondary pneumonia, or a late infection from the oral fistula.

The author was first impressed with these facts when it was found that the cases first cured were either cancer originating in the floor of the mouth, or cancer of the tongue invading the floor of the mouth, in which it was absolutely necessary to resect portions of the lower jaw in order to remove the disease. The extent of the disease, therefore, forced the surgeon to the more radical and mutilating procedure, and allowed him to perform removal *en bloc*. During the same period, earlier and more favorable cases were subjected to less extensive operations. When the floor of the mouth was not removed there was always local recurrence, and when it was thoroughly removed the patients died from the operation.

In a favorable and early cancer of the tongue in November, 1910, the author for the first time deliberately removed the right half of the tongue, the right floor of the mouth, and the right half of the lower jaw and the glands on the right side of the neck in one piece. The wound was closed by suturing the mucous membrane of the right cheek to the remaining half of the tongue. The patient swallowed at once after the operation, and no recurrence followed. The microscopic study showed that the

floor of the mouth was infiltrated, but that the glands were not.

As the removal of the lower jaw, especially in the region of the symphysis, is mutilating, the author has attempted to accomplish the same results in a different way.

The glands of the neck are first removed and after the operation their connection with the floor of the mouth below the lesion is thoroughly burned with the cautery, and the wound closed. Then the lesion in the tongue or floor of the mouth is attacked with the electric cautery. The application of this is usually repeated two or more times, until everything is destroyed down to the area of the first cauterization from below. But the healed skin-flap of the first operation forms the floor of the mouth and prevents an oral fistula.

The first operation after this method was performed in April, 1912—two years ago. The lesion was a cancer about the size of a silver dollar, occupying the floor of the mouth between the tongue and the symphysis of the jaw. Permanent cures have been accomplished in similar cases by an *en bloc* dissection of tongue, floor of the mouth, jaw and glands. The oldest case lived fifteen years, but this is a very mutilating operation, and a recent patient refused to submit to it. This led the author to attempt what he had had in mind for some years. At the present writing — two years after operation — there is no evidence of recurrence and no mutilation.

Four cases have since received this treatment with, so far, apparent success.

The majority of cases of cancer of the tongue seek surgical aid at an unnecessarily late period. In every case the patient is warned. There is always something to be seen and felt in the tongue or floor of the mouth. If such a lesion is investigated at once, a local operation with the electric cautery should be sufficient; in a little later stage, removal of the glands and repeated cauterizations in the mouth; in still later stages, resection of the jaw must be done. The author's recent experience seems to show that this operation should be done in stages: First, thorough removal of the glands with cauterization of the floor of the mouth from the neck wound; second, cauterization of the lesion within the mouth; third, removal of the lower jaw and cauterized area. These points were discussed in detail with illustrative cases in the complete paper.

When the cases observed up until 1908 — a period of 18 years — are compared with those observed during the past five years, the influence of education is well shown. The very early precancerous lesions have increased from 8 to 30 per cent; the late and inoperable cases have decreased from 18 to 10 per cent; and the cures have increased from 21 to 50 per cent.

When the author considers his own personal cases operated on in the past five years — 14 cases in all — by these newer methods, he finds that there has been no post-operative mortality, and so far but one patient has died of recurrent carcinoma. In this

case the lesion of the tongue had previously been subjected to operation, the recurrent tumor was extensive, and the glands of the neck involved. In this group every type of operation according to the newer methods described is represented. At the present time there is evidence of recurrence in only one case, and here the lesion was most extensive and the operation most radical.

The experience with these 14 cases proves the point as far as the immediate mortality is concerned, because considering all cases the post-operative mortality has been about 22 per cent. Since recurrences as a rule take place within one year of the operation, the results in these 14 cases also demonstrate that the improved methods promise a much larger per cent of permanent cures and certainly a longer freedom from recurrence.

It is, therefore, apparent that the technique of operations for cancer of the tongue has been conquered. Now, if men can be educated to present themselves earlier for operation the disease will doubtless be conquered.

Crile, G. W.: The Two-Stage Operation. *Tr. Am. Surg. Ass., N. Y., 1914, April.*

By Surg., Gynec. & Obst.

The safety of certain operations, especially those for cancer of the rectum, stomach, large intestine, uterus, larynx, and the tongue, is increased by performing the operation in two stages. The first stage prepares the way for the safer second stage especially in a weakened patient; and the danger of reimplantation of cancer-cells is lessened. The general advantages of the two-stage operation are greatly increased by the employment of nitrous oxide-oxygen anæsthesia and the general technique of anoci-association.

In cases of cancer of the rectum, a preliminary colostomy prepares the way for the major operation. In cancer of the stomach gastro-enterostomy is first performed, the balance of the operation being deferred until the intestinal balance is assured. In cases of uterine cancer the danger of a fatal reimplantation of cancer-cells is obviated by a preliminary destruction of the cancerous growth by cauterization. The manifold dangers attending laryngectomy are lessened or obviated even by a preliminary tracheotomy at which time the deep planes of the neck are packed with iodoform gauze. The resultant local reaction fixes the trachea, protects the mediastinum, and eliminates the danger of vagitis. The author discusses also the advantages of the two-stage operation for cancer of the tongue and for acute abdominal infections. In exophthalmic goiter a three-stage operation may even be necessary to control the hyperthyroidism and restore the psychical as well as the physical balance of the patient.

In general it may be said that the two-stage operation under anoci-association gives the surgeon his maximum opportunity for lessening the operative mortality rate in many of his greatest surgical

risks; thus the surgeon may triumph over surgical difficulties by strategically dividing his forces. In the author's own personal experience the mortality rate of cancer cases has been diminished 50 per cent by the employment of the two-stage operation.

Powers, C. A.: Systemic Blastomycosis. *Tr. Am. Surg. Ass., N. Y., 1914, April.*

By Surg., Gynec. & Obst.

Powers discussed the above subject, giving the history, pathological conditions, course, and ordinary termination of the disease. He related two cases, both of which were fatal. The first of these had been studied bacteriologically over a period of nearly two years, the cultures of the micro-organisms being carried successively from one animal to another. According to the author, blastomycosis generally results in death when it becomes systemic. Prolonged and increasing doses of potassium iodide and of cupric sulphate may possibly be of value. The condition generally begins with cutaneous or subcutaneous lesions, and generalization may be prevented by very early and very wide excision of the affected tissues. Early diagnosis of the cutaneous and subcutaneous condition is therefore of prime importance.

Interesting facts derived from one of Powers' cases regarding the botany of the organism have been presented by Whitman, Professor of Pathology in the University of Colorado.

The author strongly advises early, thorough, and wide excision of all blastomycotic lesions, when this be possible, with a view to preventing their generalization.

Brewer, G. E., and Cole, L. G.: Résumé of Röntgenological Diagnosis of Ulcer of the Stomach and Cap. *Tr. Am. Surg. Ass., N. Y., 1914, April.*

By Surg., Gynec. & Obst.

The object of this communication is to report a series of cases furnishing data which may help to solve the two following important questions:

1. Is there reason to believe from our present experience that the röntgen rays will eventually prove as valuable for the diagnosis of surgical lesions of the stomach and duodenum as for the diagnosis of fractures and urinary calculi?

2. What method of röntgen examination gives the most accurate results?

The most satisfactory diagnostic method up to the present time has been serial röntgenography; i. e., the study of 50 or 60 röntgenograms of the patient in various postures, taken in several series at intervals of two hours until the stomach is empty. These röntgenograms are studied individually and collectively, or reproduced cinematographically. Recently the authors perfected a true röntgenocinematographic machine, capable of making 50 röntgenograms of a single cycle, or 200 röntgenograms of an individual peristaltic contraction from the fundus to the pylorus. The following was gained by such examination or by serial röntgenography:

1. Size, position and shape or type of the stomach.
2. Activity of the peristalsis, and width of the peristaltic contraction.
3. Character of the systole and diastole.
4. Depth of the rugæ and the direction in which they run.
5. Degree of dilatation, and the motor phenomena of the descending and horizontal duodenum.
6. Pyloric sphincter—whether clear-cut and well defined on both surfaces and three-sixteenths of an inch wide, or irregular in contour and wider than normal.
7. Cap—*pilleus ventriculi*—whether symmetrical, corresponding in size and contour with the pars pylorica, or invisible, deformed, or spasmodically contracted.

The diagnosis of extensive gastric lesions is based on permanent filling defects in the walls of the stomach or cap, whereas the diagnosis of early lesions, particularly of small, indurated ulcers and adhesions, is based on the interruption of peristaltic contractions as they progress pylorusward. The interpretation of findings has been worked out by a study of about 20,000 röntgenograms of 680 cases. A report on 27 consecutive cases, examined röntgenographically by Cole and operated on by Brewer, serves to show the accuracy of this diagnostic method.

The clinical history, physical examination, and gastric analysis of these patients was unknown to the röntgenologist, who reported to the surgeon his exact findings and an opinion regarding the presence or absence of a gastric or duodenal lesion, its location, extent, and probable cause. In several cases a lesion in some other portion of the gastro-intestinal tract was diagnosed. Later, each case was explored and the findings at operation recorded.

In 21 cases an absolute röntgenological diagnosis was made and in 20 instances was confirmed in every respect by operation.

A tentative diagnosis, on account of incomplete examination, was made in 6 cases. Surgical procedure confirmed 4 of these and disproved the other two. One of the 2 röntgenological errors was due to the fact that a diagnosis of ulcer of the cap was based on too few röntgenograms to justify a differentiation between ulcer and spasmodic contraction. The hyperæmia and œdema, observed at operation, were undoubtedly the result of a spasm, but no ulcer was found. The other case had all of the characteristics previously described as indicating spasm, but as the area involved was accentuated by a circular constriction, the lesion was considered organic rather than spasmodic. A careful matching of the röntgenograms over each other would have prevented this mistake.

The röntgenological diagnosis was confirmed by the surgical findings in 89 of the cases examined. In 40 per cent a negative diagnosis of gastric or duodenal ulcer or carcinoma was made by the röntgenologist, even though the symptoms were sufficiently severe to warrant surgical procedure;

and in not a single instance was either of these conditions found on operation. In one-half of these cases a lesion in some other part of the gastro-intestinal tract was diagnosed röntgenologically and proven by surgical procedure.

If in a long run of cases such a high percentage of correct negative and positive diagnoses can be made röntgenologically as this series of 27 consecutive cases indicates, there is no doubt that the röntgenological diagnosis of surgical lesions of the gastro-intestinal tract will prove as valuable as that of fractures and urinary calculi. The time seems near at hand when chronic surgical lesions of the stomach should not be operated upon without previous röntgenological examination, if it is possible or practicable to obtain one.

Summers, J. E.: Suggestions Regarding the Anatomy of, and the Surgical Technique in the Treatment of Jönnesco's Membrane. *Tr. Am. Surg. Ass.*, N. Y., 1914, April.

By Surg., Gynec. & Obst.

Summers first said that the Jönnesco-Jackson-Reid membranes should be considered as congenital; that they may always be demonstrated in every individual should the incision admit; that they are purposive and intended by nature as ligamentary supports preventive of intestinal stasis rather than causative, and that if this is so they should be divided only after they may have become restrictive of intestinal function from loss of nervous and muscular tone resulting from chronic intestinal toxæmia; that the so-called "white line" is the line of fusion of the duodenal and colonic peritoneum with the parietal peritoneum, after their rotation has been completed, and can be made manifest by rotating the attached hollow viscus in a direction continuous with the course of the blood-vessels and fibers of the membrane—a direction opposite to the foetal rotation. This "white line" may be called the ligamentary attachment of the pericolic membrane to the parietal peritoneum.

The viscera of men differ in as great a degree as do their faces—there are no two exactly alike. The author believes that the Jönnesco-Jackson membranes are the cause of intestinal stasis only when their support is defective, or, on the other hand, where it may be excessive and cause angulation. These membranes, although present in children, seldom produce symptoms in them because intestinal peristalsis is sufficiently powerful in childhood to overcome minor difficulties. He has never observed symptoms of these membranes in anyone under seventeen years of age, and most of the sufferers were over thirty years of age, and from there on to sixty. Intestinal stasis can be caused independently of any angulating bands or ptoses, as it has been clinically proved to be caused by an incompetency of the ileocolic valve in a large number of people—250 out of 1500 examinations—and the condition remedied by an operation correcting this incompetency. The X-ray study of the al-

imentary tract is of invaluable service in locating the cause of obstruction in obstinate cases. Very many sufferers from intestinal stasis due to ptoses of the hollow viscera are best relieved by mechanical supports.

Martin, E.: The Ileocæcal Valve as a Factor in Chronic Intestinal Stasis. *Tr. Am. Surg. Ass., N. Y., 1914, April.* By Surg., Gynec. & Obst.

The presence of a distinct valve, indeed a double valve, at the ileocæcal junction, is readily and clearly demonstrable. The two lips which project into the cæcum act mechanically though they are supplied with muscular fibers which prevent regurgitation. This serves the physiological function of delaying the intestinal contents in the lower ileum for a period, frequently of many hours.

The reason for the persistent constipation observed in cases of chronic appendicitis is probably incident to a disturbance of the ileocæcal sphincter, reflexly excited by the inflamed appendix. The cure of the constipation incident to the removal of these appendices is probably due to restoration of normal sphincteric action incident to the removal of the disturbing factor. The betterment in the general health following these operations is almost certainly due to the cure of the accompanying intestinal stasis which is ileal and not cæcal.

The failure to cure constipation by the removal of a chronically inflamed appendix and consequently the failure to better the general health or even the local pains which are typical of a sphincterismus rather than of an inflammation, is probably due to the circumstance that either the appendix is not the disturbing factor or that the sphincterismus has been so prolonged that either muscular hypertrophy or fibrosis has resulted and that return to its normal functioning is impossible. For such conditions a submucous section of the sphincter should be adequate.

The propulsion of the cæcal contents into the ascending colon and thence to the sigmoid is due to the stimulus of the forceful and copious injection of the lower ileal content into the cæcum. Such an injection is only possible when the ileocæcal sphincter is functioning properly. A gradual filling of the cæcum fails to produce a propulsive impulse, resulting in a gradual dilatation with, at times, consequent cæcal sagging. It would, therefore, seem rational to consider ileocæcal spasm as one of the important factors in colonic stasis. The argument is further reinforced by the fact that after reimplantation of either the transverse colon or the sigmoid, the cæcum and the ascending colon may become enormously distended unless means be taken to prevent bacterial passage of the contents of the large bowel.

By a submucous section, the ileocæcal sphincter may be rendered partially or completely incompetent, thus preventing back-pressure and stimulating the cæcum to contract by a rapid outpouring of the ileal contents into its lumen. It is probable

that a portion of the good results obtained by ileosigmoidostomy are incident to the fact that the ileocæcal sphincter is ablated if cases of intestinal stasis are subject to surgical treatment before the colon is so profoundly altered as to be obviously incapable of propulsive action upon its content and submucous section of the ileocæcal sphincter or a plastic operation dividing all the coats of the bowel should serve as well if not better than ileosigmoidostomy and, in any event, is preferable as a preliminary procedure since it is simple in technique and is as devoid of risk as is the interval appendix operation.

Hamann, C. A.: Ligation of the Innominate Artery for Aneurism of the Subclavian, in a Patient 68 Years of Age. *Tr. Am. Surg. Ass., N. Y., 1914, April.* By Surg., Gynec. & Obst.

Hamann reports the ligation of the innominate artery for aneurism of the subclavian in a 68-year-old patient in which part of the clavicle was resected, the innominate tied with a heavy silk ligature, and the right common carotid tied with chromicized catgut. There were no complications following the operation and there was complete recovery and cure of the aneurism. The patient was well when seen fourteen months after the operation.

Murphy, F. T.: Choice of Anæsthetic in Operating for Abscess of the Lung; Report of Two Cases Operated upon under Local Anæsthesia. *Tr. Am. Surg. Ass., N. Y., 1914, April.* By Surg., Gynec. & Obst.

The writer believes that surgeons too generally have failed, in considering the needs for the use of the negative and positive pressure methods of Sauerbruch and Brauer, or the intratracheal insufflation of Meltzer and Auer, to distinguish sharply between intrathoracic operations in which the free pleural cavity will or may be opened, and operations in which the pleural cavity will not be opened.

The essential factors in operating for non-tuberculous abscess of the lung are considered to be the correct diagnosis, interference before the patient is so toxic as to be beyond relief, drainage without infection of the free pleural cavity, and avoidance of any factors which may tend to cause extension of the infection to uninvolved portions of the lungs.

The value of stereoscopic X-ray plates is emphasized as an aid in diagnosis and the results with and without operation are compared. The need of protecting the general pleural cavity from the abscess content is emphasized.

The author believes that where adhesions do not exist, the abscess can be drained most advantageously by a two-stage operation, and recommends that at the first stage the muscle flap be turned back and the ribs resected, the lung being sutured to the parietal pleura, or adhesions caused by placing gauze over this exposed area; and that at the second stage, drainage should be instituted through the firm adhesions.

Local anæsthesia is recommended because it in no way interferes with the operation, and with it the dangers of the general anæsthetic are avoided. If a general anæsthetic is used, the intratracheal insufflation method with gas and oxygen is recommended. Of 2 cases in which the abscess was readily drained under local anæsthesia, by the two-stage operation, one patient recovered; the other died.

Lilienthal, H.: Pulmonary Abscess and Bronchiectasis: a Clinical Report. *Tr. Am. Surg. Ass.*, N. Y., 1914, April. By Surg., Gynec. & Obst.

Lilienthal's paper presents his experience and the conclusions arrived at from the study of 12 cases with 14 operations on 11 of the patients.

There were 5 cases of bronchiectasis with various drainage operations followed by 4 "improvements" and 1 death; 3 acute abscesses of the lung with 2 cures; 1 extensive gangrene of the lung, died; 1 fetid bronchitis taken for bronchiectasis, died.

There is also the report of an unfinished case of bronchiectasis of the right lower lobe in a child 4 years old, with resection of the entire lobe — convalescence was well established at the date of the paper. The cause of the bronchiectasis was the aspiration of a piece of nut one year before, but in spite of the removal of the foreign body by bronchoscopy the suppuration continued.

The author calls attention to various details in diagnosis and technique, speaking strongly in favor of the more frequent pre-operative employment of the bronchoscope. The conclusions based solely on the cases in the paper are as follows:

1. The differential diagnosis of true lung abscess and suppurative bronchiectasis is important.
2. Radiographical study of each case is essential.
3. Bronchoscopical examination is a valuable procedure and should not be omitted.
4. Drainage of a lung abscess by thoracotomy is likely to result in cure.
5. Drainage of large infected bronchiectases may be followed by improvement, but complete recovery is unlikely.
6. Extensive thoracoplasty should be reserved for those cases in which other operations have failed.
7. Exploration of the pleural cavity and of the lungs by intercostal thoracotomy is feasible and reasonably safe.
8. Extirpation of a bronchiectasis by removal of the affected portion of the lung may lead to complete recovery but the danger of the operation is great.
9. Artificial pneumothorax and Tuffier's extra-pleural tamponade should be reserved for cases of pure tuberculosis.
10. Intratracheal insufflation is a simple, accurate, and safe method of securing differential pressure.
11. Operations involving one lung can be performed with inhalation anæsthesia.

Mayo, C. H., and Beckman, E. H.: Visceral Pleurectomy. *Tr. Am. Surg. Ass.* N. Y., 1914, April. By Surg., Gynec. & Obst.

Up to the time of Fowler and DeLorme, various operations for the relief of chronic empyema with a large cavity had been tried in order to obliterate the cavity by collapsing the chest wall and without making any attempt to restore the function of the collapsed lung. The operations of Fowler and DeLorme have been accepted quite generally in Europe but have not received much attention from American surgeons. A systematic review of the literature discloses but 24 cases reported by American surgeons in the last twenty years.

It is believed that in a considerable percentage of cases of chronic empyema, the lung will expand to a greater or less extent if visceral pleurectomy, combined with gridironing of Ransohoff, is performed. In the experience of the authors, the operation is not as severe or as dangerous as the Schede operation. Patients should be carefully prepared for operation by securing drainage at the most dependent part of the cavity, by reducing the infection to a minimum and the resistance of the patient to the maximum by vaccines. The operations for this condition cannot be made by rule, but must be selected individually for each case; they are often best done in stages, especially when the patient is in a debilitated condition. It is advisable to try visceral pleurectomy first, as some lung expansion is nearly always obtained. If the cavity still persists, the operations of Estlander and Schede or one of the modifications of these operations can be done at a later time to obliterate the cavity remaining. Four cases of visceral pleurectomy are reported, three of which healed primarily, and in the other, two-thirds of an entirely collapsed lung is functioning.

MacKenzie, K. A. J.: Double and Anomalous Forms of Empyema; a Preliminary Report on a Proposed Method of Treating Empyema, without Resort to Pneumothorax. *Tr. Am. Surg. Ass.*, N. Y., 1914, April. By Surg., Gynec. & Obst.

The author reports in detail four of his own cases of double empyema which occurred during an epidemic of influenza in the Northwest in the year 1899. In all the cases either bilateral simultaneous thoracotomy or bilateral thoracotomy with a few days' interval between operations was done. Several interesting cases of anomalous forms of empyema are reported, including gunshot wounds, stab wounds, putrid empyemata following aspiration, and one case in which the *paragonimus westermanii* was the etiological factor. Thirty fully reported cases of double empyema are collected from the literature in all of which aspiration, incision and drainage, resection and drainage, or some combination of the three procedures was performed simultaneously or at intervals of 1 to a 150 days.

In the 34 cases in which the ages varied between 13 weeks and 40 years, aspiration was performed 15 times on the right side and 12 times on the left.

Many cases were aspirated two or three times on the same side; however, in 16 out of the 27 it was necessary to make an incision or do a resection later. One case was cured by simple bilateral aspiration.

Incision was performed 22 times on the right side and 23 times on the left; resection was performed 9 times on the right side and 10 on the left; simultaneous thoracotomy was performed five times with recovery in each case. Death resulted in three cases.

Including the fully and partially reported, 140 cases of double empyema are found in the literature, with a total mortality of 38, or 27.14 per cent.

The conclusions are as follows:

1. The inefficiency of aspiration alone considered together with the danger of septicopyæmia warrants a more thorough operation in all cases.

2. The shock of an acute traumatic pneumothorax and the present mortality in the treatment of empyema makes the development of a better procedure desirable.

A preliminary report of a very ingenious substitute for acute operative pneumothorax is submitted. The plan is to replace the serous or purulent fluid of pleurisy or empyema by a non-toxic and non-absorbable fluid such as petrolatum or liquid paraffine. The paraffine is introduced at a higher level at the same time the effusion is withdrawn below. Large aspirating needles are used or by a special technique the rib is trephined and a hollow screw threaded inside and out is driven through the rib, thus allowing access to the pleura whenever required. After the hydrocarbon is introduced the channel is closed by a solid metal screw, and the skin is closed except for a small gap leading to the screws. Should the signs indicate a reaccumulation of fluid the process can be repeated without anæsthesia. At a later period 2 to 4 ounces of the petrolatum is withdrawn at two to three day intervals until the pleural cavity is free from fluid.

The advantages are:

1. The method offers the advantage of relieving empyema without the shock of a traumatic pneumothorax.

2. The hydrocarbon will act as an inhibitor of bacterial growth.

3. By holding the pleural surfaces apart until acute inflammation is allayed, dense and deforming adhesions will be prevented.

4. The substitution of a non-absorbable and non-toxic fluid for the serofibrinous effusion of acute pleurisy may prevent progression.

5. This procedure may be substituted for compression of the lungs by nitrogen gas in the treatment of tuberculosis.

W. H. NORTON.

Huntington, T. W.: Uncomplicated Tuberculous Foci in Bones, and Their Treatment. *Tr. Am. Surg. Ass.*, N. Y., 1914, April.

By Surg., Gynec. & Obst.

The term "uncomplicated foci" has reference to cases in which the focus exists (1) as an incipient lesion, but sufficiently advanced to cause symptoms,

(2) as a lesion which has resumed activity after a period of quiescence. In neither has it become the seat of a mixed infection, nor has it invaded the adjacent joint.

Attention is called to the presence of living bacilla in an encapsulated area over a long period of time and the tendency to recrudescence is emphasized. The malignancy of bone tuberculosis as described by Painter is considered.

The reliability of orthopedic statistics is sharply questioned and the author suggests the propriety of the general surgeon assuming jurisdiction in a field uniformly conceded to the orthopedic specialist. He believes that "latency," as applied to bone tuberculosis, is a word to juggle with, and is little short of a misnomer. He calls attention to the close analogy between tuberculous foci and a considerable pathological group, such as gall-bladder disease, chronic appendicitis, and renal lithiasis. Latency in this latter group he believes to be based upon error, and perniciously misleading.

To leave an accessible tuberculous bone focus to smoulder until provoked to activity does violence to sound surgical principle. Such a course in the presence of ordinary osteomyelitis would be reprehensible, and Huntington protests that thorough removal of the focus and surrounding tissue is as logical for tuberculous as for ordinary osteomyelitis. Operative treatment during the early stage of this disease before invasion and destruction of surrounding tissue has been looked upon with disfavor by most authorities. Radical procedure has usually followed failures where conservatism has been the main reliance.

Early diagnosis and accurate localization of the focus are essential before proceeding to radical measures. The latter may be difficult or impossible until X-ray demonstration has been made. Objects to be attained by early direct interference are: (1) Permanent cure by elimination; (2) marked reduction of time of treatment; (3) prevention of complications, such as abscess, mixed infection, disintegration of bone and joint structures, and deformity; (4) avoidance of fatal systemic invasion.

The author is able to report sixteen successive cases with favorable termination treated by this method, as follows: Upper end of femur, 3; lower end of femur, 5; upper end of tibia, 4; internal malleolus, 2; lower end of radius, 2.

Wound infection was encountered and convalescence delayed in three of the operations upon the condyles of the femur. These occurred during the writer's early experiences, when the technique was imperfect.

Lothrop, H. A.: Frontal Sinus Suppuration; the Establishment of Permanent Nasal Drainage; the Closure of External Fistulæ; Epidermization of Sinus. *Tr. Am. Surg. Ass.*, N. Y., 1914, April.

By Surg., Gynec. & Obst.

Chronic suppuration of the frontal sinus is common. Many cases may be permanently cured by

intranasal treatment whereby the anterior and upper portion of the middle turbinate and some adjacent cells are removed. Many other cases, however, do not yield to such treatment and tend to be obstinate, notwithstanding the various methods of operation in present use, which are classified as (1) intranasal and (2) extranasal operations.

Most clinicians and anatomists are agreed that the intranasal effort to enlarge the vicinity of the ostium of the sinus is attended with unnecessary risk. The external operations consist in removing the facial or orbital wall of the sinus, or both, while the more radical, such as the Killian operation, removes also a portion of the nasal process of the superior maxilla and lachrymal bone. These operations strive to obliterate the sinus and are attended with subsequent disfigurement, varying according to the type of operation.

The real issue in these cases is the establishment and maintenance of adequate drainage. This is difficult because of the anatomical relations in the vicinity of the ostium. The author believes that the principle of the Killian operation is wrong, because the bony support afforded by the nasal process of the superior maxilla and lachrymal bone is removed and thereby the soft parts are drawn in subsequently, thus narrowing the region. In the smaller sinuses, easily obliterated, provided the patient does not object to the deformity, the result may be satisfactory.

The steps in the operation practiced by the writer are as follows: A small bony opening is made in the facial wall just above the nasal process; a small probe is passed through the ostium into the nasal cavity and left there while, by means of small curettes at the start, and subsequently the use of burr-drills, the neighboring anterior ethmoidal cells and the nasal crest of the frontal bone are removed; then the thickened mass of bone which exists at the region of articulation between the frontal bone above and the nasal bone, and the nasal process of the superior maxilla are so thinned as to leave only a thin shell. This removal can be accomplished only by means of burr-drills introduced through the nose with the burr in sight through the opening in the facial wall. Furthermore, the writer believes that there is no objection and that it is advisable, even when only one sinus is involved, to break through the interfrontal septum and remove in the same manner the corresponding portion of the floor of that sinus. The removal should include also a portion of the nasal septum for a distance below the interfrontal septum. By this procedure a surprisingly large opening is obtained and an instrument entering either nostril can be passed into either sinus and swept across from one side to the other. The external wound is closed. By this means chronic fistulae may be cured at once and the most obstinate yield readily.

As after all operations upon the frontal sinus, a certain amount of subsequent intranasal treatment is necessary in order to control the growth of granulation tissue.

In cases where, as a result of previous operations, the bony structures above mentioned have been extensively removed followed by excessive granulation-tissue formation causing early obstruction, successful results have been obtained by epidermizing the sinus after the principle carried out in the mastoid region. This is accomplished by turning a small flap from the upper eyelid so that its surface faces the sinus and the epithelium spreads circumferentially, just as with any skin graft, the outer wound being closed immediately by a simple plastic operation leaving a linear scar.

Hartmann, H.: The Gastro-Intestinal Mouth in Cases of Permeable Pylorus. *Tr. Am. Surg. Ass.*, N. Y., 1914, April. By Surg., Gynec. & Obst.

It is generally accepted that in the presence of permeable pylorus, the gastrojejunal mouth is inclined to obliterate anatomically in consequence of its physiological uselessness. These two affirmations seem to the author to be mistakes:

1. A gastrojejunal stoma, well lined by mucous membrane, with no ulceration whatever, and with no scar tissue, remains permeable forever. The occlusion of gastro-intestinal stoma has been observed as well in cases of pyloric or subpyloric stenosis (41 cases) as in cases of free pylorus (3 cases). The obliteration results from formation of scar tissue: (1) Original absence of union per primam and healing by granulation; (2) secondary development of an ulceration most frequently of peptic origin at the point of anastomosis.

2. The function of the gastrojejunal stoma takes place even when the pylorus is permeable. Experiments on dogs have shown to us that if the stoma is situated on the cardiac part of the stomach, the chyme almost always passes through the pylorus; on the contrary, if the stoma has been made on the pyloric antrum, the gastric content almost always passes through the stoma. These differences are explained by the fact that the stomach has to be divided physiologically into two parts: a cardiac part, simple reservoir, where secretions act on the ingested aliments; a pyloric part, a motor thrusting the gastric contents into the intestines. Radiological examinations on the author's patients confirm experiments on dogs.

The author summarizes briefly as follows: (1) There is no more fear to be had of an anatomical obliteration of the gastrojejunal stoma in the case of a permeable pylorus than in any other case. (2) The gastrojejunal stomata, in the case of permeable pylorus, are physiologically useful when they are established on the pyloric antrum.

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INTERNATIONAL ABSTRACT OF SURGERY

JUNE, 1914

MONTHLY COLLECTIVE REVIEW

RECENT ADVANCES IN SPINAL SURGERY

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DURING the past few decades the surgical treatment of intracranial disease has attracted much attention. The complexity of structure of the brain, the diversity of its functions, the variety in the clinical manifestations of its diseases, have made the field a very fruitful one for the investigator. Hence, for a time at least, too little attention was paid to the surgical treatment of the diseases of the spinal cord and its membranes. This was the more surprising because it soon became evident that the results of operative interference in spinal disease were far better than those obtained in intracranial surgery.

During the past few years, however, the interest in spinal cord surgery has become renewed, the field has become widened, the results obtained have become better and better, and the feeling of pessimism which surrounded and hedged in the surgery of the central nervous system has changed into one of optimism in respect to the operative treatment of surgical spinal disease.

It has become evident that special training and experience are necessary for successful work in this field, but that for the special worker a spinal operation is not a very dangerous one.

Technically there is little difference of opinion as to the manner in which a laminectomy should be done. The operation is usually performed under general anæsthesia; that it can be done under local anæsthesia has recently been again pointed out by Heidenhain (1).

The osteoplastic methods described by Marion (2), Cavicchia (3), Bickham (4), have been well nigh forgotten, for they are too time-consuming

and too complicated and are frequently followed by wound complications. The attempt has been made by several Italian writers and by A. S. Taylor (5) to develop the operation of hemilaminectomy. The operation recommended by them consists of the removal of the laminæ on one side only. They claim that a better spinal column is left, and that the exposure of the spinal cord and nerve-roots is often as good as in the complete operation. It is clear, however, that the removal of the laminæ on one side can not give as good an exposure as the removal of spinous processes and laminæ of both sides.

A wide exposure of the operative field must be obtained in every spinal operation, for the cord tissue is more delicate, and irreparable damage to it is done more easily than to almost any part of the brain in an intracranial operation. Therefore, most operators (Horsley (6), Krause (7), Von Eiselsberg (8), Frazier (9), Cushing (10), Kuettner (11), Kocher (12), Elsberg (13), etc.) perform complete laminectomy. Elsberg (13) has paid especial attention to the functions of the spinal column after complete laminectomy, and has shown that, in the majority of instances, the normal mobility of the vertebral column is completely regained after a laminectomy. Nevertheless, the operation of hemilaminectomy may have a field of usefulness in those cases where the spinal nerves of one side are to be divided for pain or spasticity.

SPINAL FRACTURES

The surgical significance of a spinal fracture depends to a great extent upon the injury that

has been inflicted upon the spinal cord and nerve-roots. There is still a difference of opinion regarding the question of indications for operative interference in fractures of the spine. It is often difficult or impossible to determine beforehand whether an irremediable injury to the cord has occurred; many hopeless cases have been operated upon, and therefore very poor results obtained from the surgical interference. The neurologist, and the neurological surgeon who is familiar with the symptoms of organic neurology, have to decide whether a complete transverse crush of the cord has occurred. At the present time, the majority of neurologists and surgeons are very conservative in their recommendations of operative interference in fresh spinal fractures. Sherman (14), Coste (15), Kocher (16), Elsberg (17), have endeavored to formulate exact indications and contra-indications, but these authors make tacit acknowledgment that the diagnosis of the extent of the cord injury is often very uncertain, and that operative intervention may be indicated if the symptoms are very marked but not complete. If there is complete motor and sensory loss up to a level, with complete or almost complete abolition of all of the reflexes, operative interference should not be attempted. If there is some power and sensation left, an operation may do much good. Thompson (18) advises against operation in cord injuries unless the X-ray picture gives evidence of pressure upon the cord by fractured bone. Fractures of the cervical spine are most apt to cause immediate death or complete transverse crushing of the cord, while fractures in the lower dorsal and lumbar column are most apt to cause only a partial contusion of the cord and nerves of the cauda equina. Very satisfactory results from operative interference have been reported by Schloffer (19), Bottomley (20), Coriat and Crandon (21), and by many others.

Allen (22) has published an excellent piece of research work in which he demonstrated that it was feasible to make an incision in the cord to relieve the oedema and swelling from a recent injury. The incision was followed by excellent results in the animals whose spinal cord had been contused by a falling weight. Allen states that the operation must be done early before the cord tissue has been destroyed by the oedema which follows the injury.

Opinions differ as to the time at which a fresh fracture of the spine should be operated upon. Allen (22) says operate early if at all; Coriat and Crandon (21) declare that one should never

delay more than forty-eight hours; Bottomley (20) says wait four to five days. The conclusion at which we have arrived is that no rules can be laid down, but that each case must be considered for itself. If the X-ray shows compression or angulation of the spinal canal, and the symptoms are not those of a transverse lesion, the patient should be operated upon as early as possible. Otherwise it is better to wait.

Injuries to the spinal cord by bullets should be treated according to the same principles as those which must guide us in other spinal injuries. If the cord has only been bruised, as in the patient of Coley (23), a complete recovery may occur; if the X-ray shows that the bullet is lodged in the cord itself, there is usually a transverse lesion, but bullets have been removed from the substance of the spinal cord with good recovery of function, as in the patients of Braun (24), and of Eisengraber (25).

During the past few years there has been little written concerning the operative treatment of deforming lesions of the vertebral column which produce cord symptoms. These are due either to an old fracture, to osteo-arthritis, or to spondylitis. Bailey and Casamajor (26) have called attention to the symptoms which may be caused by an osteo-arthritis of the vertebræ and to the beneficial effects of decompressive laminectomy. Elsberg (27) has published some excellent results from laminectomy for old fractures of the spine with angulation of the cord. A few instances of improvement after decompressive operations for compression of the cord due to spondylitis have appeared. In the cases of Henschen (28) and Mendler (29) the X-ray showed marked deformities of the spinal canal and in one case compression of the cord by a sequestrum.

SPINAL TUMORS

An extensive literature has gradually developed on the subject of tumors of the spinal cord, and many questions of both neurological and surgical interest have been raised.

The diagnosis of spinal tumor is becoming more and more certain and the symptomatology of the disease is becoming more clearly understood, because exploratory operations are more frequently done. In the hands of the surgeon of experience a laminectomy is not a very serious operation, and the mortality should be less than ten per cent (McCosh, Woolsey (30)) or even five per cent.

All writers agree that the differential diagnosis between intramedullary and extramedullary growths is often very difficult; a painless begin-

ning and dissociation of sensations may occur with extramedullary tumors, and root pains are not so rare in intramedullary disease. This has been pointed out by Schultze (31), Ropke (32), Rothmann (33), and others. The X-ray is only of negative value for the diagnosis of spinal tumor, although absorption of bone may occur with extramedullary and extradural growths. The fluid obtained by lumbar puncture is often of a yellow color with an increased amount of globulin and a normal number of cells (Nonne (34), Kaplan (35), Raven (36)).

A number of authors have warned against too great a reliance on the Wassermann reaction, for a patient with lues may also have a spinal tumor (Castelli (37), Elsberg).

The results that can be obtained by the operative removal of spinal tumors vary with the location of the growth, its connections with the cord, and with the duration of and the number of the symptoms. The patient should be referred to the surgeon early before cord symptoms have long existed. Then a complete recovery can occur, as in cases reported by Rothmann (33), Van Gehuchten and Lambotte (38), Hecht (39), Frazier (40), Babinski (41), Pussep (42), Martius (43), Kennedy (44), Clarke (45), Bovaird and Shlapp (46), Hunt and Woolsey (47), and others. If a paraplegia has existed for a longer time—six months to two years—the outlook for complete recovery is not so good. Considerable power may return in the paralyzed limbs, but more or less spasticity, weakness, and sensory disturbances will remain, as in the patients of Rothmann (48), Pussep (42), Rotstadt (49), Schultze (31), Nonne (34), Redlich (50), and Sato (51). If the paralysis has existed for a number of years, no improvement will follow the removal of the tumor (Van Gehuchten and Lambotte (38), Pussep (42), etc.).

Up to within the last few years intramedullary growths were considered hopeless, but it has been shown that localized growths occur within the cord substance, and that these can be removed if the proper method be followed. Successful operations have been reported by Ropke (32), Von Eiselsberg (52), Schultze (31), Elsberg and Beer (53), Elsberg (54), Foerster (55), and others. Some good results were obtained by incision of the cord and peeling out of the tumor, but usually such manipulations have caused a transverse lesion of the cord. In the case of Ropke (32), a tumor was found which was partly intra- and partly extramedullary. There were two extramedullary masses which were connected by an intramedullary growth. The cord

was incised longitudinally, the entire growth easily removed, and the patient was much improved after the operation.

In order to do away with all manipulation of the cord, Elsberg and Beer devised the method which they called delivery of the growth by "extrusion." In this method the cord is incised near the posterior median septum down to the tumor, and the muscles, fascia, and skin closed. The tumor is gradually pushed out of its bed in the cord so that at the second operation, about one week later, it is found to lie outside of the cord tissue, so that it can be removed without injury to the cord. This "method of extrusion" allows the processes of nature to push out the tumor in the attempt to equalize pressure conditions. The authors reported two cases and Elsberg has recently reported eight operations with marked improvement in a number of instances.

Patients with malignant disease of the bodies or arches of the vertebræ should not be subjected to operation, or if malignant disease is found, the operation should be concluded as rapidly as possible. Rarely can the disease be radically removed; relapse or recurrence is the rule. The patients usually stand the operative interference badly, and collapse upon the operating table is not infrequent. The spinal cord symptoms are often due to a transverse myelitis and not to a compression of the cord by the new-growth. Therefore the attempt to relieve the symptoms by a laminectomy is a failure; in most instances the operation is not even a palliative one (Van Gehuchten and Lambotte (38), Pussep (42), Rotstadt (49), etc.).

INTRAMEDULLARY SURGERY

Rothmann (48) has published an interesting paper on the future of intramedullary surgery, and has given a good resumé of what has been accomplished up to the present time. Not only have intramedullary growths and foreign bodies been removed from the substance of the spinal cord, but the cord has been incised for irremovable infiltrating tumors (Cushing (56), Elsberg (57)), an incision has been made in the posterior columns near the posterior median septum as a decompressive method in oedema secondary to trauma (Allen (22)), in gliosis (Elsberg (57)), for the drainage of hydromyelia (Abbe (58), Elsberg, and others), and intramedullary cysts.

Spiller and Martin (59) have suggested that the anterolateral tracts can be divided in order to relieve persistent pain due to malignant disease. There was great improvement in their

patients, as well as in a patient of Beer (60) and Foerster (61). The cord is exposed in the usual manner and the anterolateral ascending tracts, which convey sensations of pain and of temperature, are divided by an incision of about two millimeters depth. If the operation is carefully done and not too much of the cord divided, no symptoms are caused by the incisions excepting a loss of all sensation for hot and cold and for pain below the level of the incision.

DIVISION OF POSTERIOR SPINAL ROOTS FOR SPASTICITY, PAIN, AND VISCERAL CRISES OF TABES

A totally new field for spinal surgery was opened up a few years ago (1908) when Foerster (62) published his first paper on division of the posterior spinal roots to relieve spastic conditions of the extremities. He based his procedure upon the following facts: Muscle tone is produced by reflex stimuli from the periphery to the cells of the gray matter of the spinal cord and is controlled and regulated by inhibitory influences from higher centers. Increased spasticity of muscles will therefore occur whenever the inhibitory impulses from the brain are cut off by disease of some part of the motor tract. In order to diminish the ensuing spasticity, it is only necessary to cut off some of the impulses from the periphery. Many writers have published reports of cases treated according to Foerster's idea, and Foerster (63) has collected a large number of cases which have been subjected to posterior root division. He also reviewed the subject of division of posterior spinal roots for the relief of painful affections, and based on theoretical considerations suggested posterior root section for the control of the visceral crises of tabes.

Not all spastic conditions can be relieved by Foerster's operation. The process must be stationary, and progressive disease should never be operated upon. In the cerebral diplegias of children—Little's disease—spasticity after injury to the cord, stationary multiple sclerosis, the method may be tried, but in posthemiplegic spasticities with athetosis no results have been obtained. A prolonged after-treatment is always necessary in order to overcome contractures and redevelop the muscles, and tenotomies and tendon plastics are often required. The intelligent help of the patient is indispensable; therefore idiotic children should not be operated upon.

Rather too many than too few roots should be divided, although the division of too many roots may cause a flaccid paralysis. Foerster has

collected 159 operations for spastic conditions with 14 deaths from the laminectomy. The results of root section are better in the lower than in the upper extremities. For the lower limbs the second, third, fourth, or fifth lumbar and the first or second sacral roots should be cut. Extension at the knee is controlled either by the third or fourth posterior root; the operator must determine by electrical stimulation of the exposed roots which is the one that controls this extension and then avoid that root. Tschudi (64) saw great improvement after division of the second, third, and fourth lumbar and first sacral; Clarke and Taylor (65) advise some combination of the first, second, third, fourth, and fifth lumbar and the first and second sacral for the lower and the fourth, fifth, and seventh cervical and first dorsal for the upper extremity; Cuneo saw great improvement after section of the third and fourth lumbar and first and second sacral.

The spasticity is often much lessened at once (Foerster (66), Guleke (67), May (68), Rausenbach and Scott (69), etc.), but usually improvement follows slowly after massage, exercises, etc.

If too few roots have been divided, the spasticity will recur; if more than two successive roots have been cut some sensory disturbances, according to Sherrington's law, will occur. Taylor has cut five roots in succession without observing any sensory disturbance, and others have failed to find sensory loss after division of three successive roots.

The operation of division of posterior spinal roots for the relief of pain is an old procedure, which was originated by Dana and Abbe, but the results in the past have been unsatisfactory and only very few of the patients operated upon within the past two years have been relieved by the interference.

The third indication for posterior root section, according to Foerster, are the visceral crises of tabes, and Foerster (63) has collected 63 operations with 6 deaths. Of the surviving 58 patients there was immediate relief in 56, but the symptoms soon returned in 18 cases. At first Foerster advised that the seventh to tenth dorsal roots should be cut on each side, but later he declared that all the roots from the fifth dorsal to the twelfth dorsal had to be divided. The more extensive the root section, the larger the laminectomy that has to be done, and when a large number of roots have to be cut very many laminae have to be removed. Great relief has been observed where only a few posterior roots have been cut (Bramwell and Thomson (70), seventh to tenth dorsal—complete relief for fourteen

months; Frazier (71), seventh to ninth dorsal—cure; Foerster (72), seventh to tenth dorsal—relief for three years).

For posterior root section most operators prefer a complete laminectomy and divide the roots intradurally (Foerster (63), Von Angerer (73), Lotheissen (74), Panche (75), Winslow and Spear (76), Frazier (71), etc.), but Taylor (77) prefers a hemilaminectomy. Guleke (78) recommends that the roots be divided outside of the dura, but the objection to this is that it is often difficult to separate the sensory from the motor root in that location. Wilms (79) suggested that the roots for the lower extremity should be cut at the conus where they lie close to each other, but the difficulty is that recognition and identification in that location is often impossible. Franke (80) advised that the intercostal nerves be avulsed, but this has given few satisfactory results, although extensively tried by French surgeons (Mouriquand and Cotte (81), Sauve and Tenel (82), Cade (83), Ingay (84), Belin and Mauclair (85), Leriche (86), etc.). Secard and Blanc (87) declare that Franke's operation is of no value.

Posterior root section has been tried for a number of other conditions. Mayesina (88) claimed to have seen great improvement in a case of erythromelalgia after division of the fourth and fifth lumbar and first and second sacral posterior roots. Leriche (89) suggested that it be tried in herpes zoster, but Secard and Blanc (90) obtained no result in the patients upon whom they operated; the operation has been tried in spasmodic torticollis without success. It has even been suggested for Parkinson's disease and ordinary paralysis agitans (Leriche). In most of these affections the operations have been done *experimentis causa*, and they have, therefore, usually been failures.

During the past decade many experiments have been made to determine whether it is possible to anastomose spinal nerve-roots, and Frazier and Mills (91) have attempted to relieve a paralysis of the bladder in a patient by an intradural root anastomosis. They divided the first lumbar root intradurally and anastomosed it to the third and fourth sacral. Eight months later the patient had improved enough to dispense with the urinal which he had worn constantly before this time. The result was, therefore, very satisfactory, although it can not be denied that the improvement might have occurred even if no root anastomosis had been done. The operation was performed six months after the

injury. Cadwalader and Sweet (92) approached the subject experimentally, but in their animals they failed to observe either a return of function or a regeneration of the nerve-roots which had been divided.

Finally, mention must be made of the decompressive aspects of the operation of laminectomy. The relief of pressure after the free removal of a number of spinous processes and laminae must be of undoubted benefit in a number of spinal conditions associated with increased intraspinal pressure. Thus great improvement has followed laminectomy for old fracture of the spine with narrowing of the spinal canal, for pachymeningitis, and for irremovable tumors pressing upon the cord.

Bailey and Elsberg (93) have called especial attention to the improvement which may follow a laminectomy where no increase of pressure has been found and report very satisfactory results in a number of cases. They suggest that the improvement may be due to the entrance of air into the dural sac or to changes in the spinal circulation.

The above review of the work that has been done in spinal surgery during the last few years will show that many advances have been made and that much has been accomplished. There is, however, much that remains to be done, and the surgeon who will devote himself to this special field will find many problems awaiting solution. He will meet with disappointments, but will have not a few successes. To the advances in our knowledge of spinal disease and its treatment the surgeon must contribute a large share. We believe that the statement of a great physician may with justice be applied also to spinal disease, "*Die Medizin muss mehr chirurgisch werden*,"—internal medicine must become more surgical.

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ABSTRACTS OF CURRENT LITERATURE

GENERAL SURGERY

SURGICAL TECHNIQUE

ANÆSTHETICS

Henderson, F.: Ether Anæsthesia. *St. Paul M. J.*, 1914.
By Surg., Gynec. & Obst.

Statistics show that ether as an anæsthetic is superior to all others in safety and range of application; with it the surgeon can work with more ease and rapidity because relaxation can be secured. If the patient is carefully watched and not disturbed while doing well, the anæsthetist will seldom meet with alarming conditions. After the confidence of the patient is gained surgical anæsthesia ordinarily may be produced by the drop method with ether in from three to five minutes.

Suggestion plays an important part in the induction of anæsthesia. The management of the jaw has much to do with the success or failure of the anæsthetic, the depth of anæsthesia depending upon the kind of operation and its stage. The patient should never be kept more deeply under the anæsthetic than is consistent with the work of the surgeon — primary anæsthesia may be used in minor operations. Experience in the Mayo Clinic does not indicate that shock is liable to be produced by light ether anæsthesia.

The dose of ether should be medicinal and not toxic. For operations, the duration of which averages about forty minutes, patients usually require between three and four ounces of ether to produce anæsthesia and to carry them through the operation. Preliminary medication is used only in selected cases and not as a routine.

The safety of ether was its own undoing, for as it did not kill, its administration was intrusted to the most incompetent person. Then came nitrous oxide, an inefficient surgical anæsthetic at best, unless combined with local anæsthesia, which, next to ether, has the widest field of usefulness. For the administration of nitrous oxide a physician with experience should be selected.

In articles in which comparisons are made between nitrous oxide and ether, conclusions are usually drawn from results obtained by the expert with the former anæsthetic and those of the inexperienced anæsthetist with ether. If nitrous oxide were given as carelessly as ether very often is, there would be many fatalities. Ether given by the drop method by a skilled anæsthetist and local anæsthesia certainly fulfill the requirements more satisfactorily than any other anæsthetic or combination of anæsthetics.

Zweifel, E.: Clinical and Experimental Study of Nitrous-Oxide-Oxygen Anæsthesia (Klinisch-experimentelle Versuche mit Lachgas-Sauerstoff Nar-kose). *Monatschr. f. Geburtsh. u. Gynäk.*, 1913, xxxviii, 546.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author describes 40 experiments with Neu's apparatus, with good results, and also experiments with Gatsch's apparatus, which gave as good results and was much cheaper. He comes to the following conclusions: It is possible to carry out small operations without pain with either pure nitrous-oxide or nitrous-oxide-oxygen anæsthesia. Nitrous-oxide anæsthesia, with or without oxygen, is well adapted for beginning chloroform-ether anæsthesia. Nitrous-oxide-oxygen anæsthesia is increased by the administration on the previous evening of 0.5 to 1.0 veronal, and by an injection of morphine-scopolamine just before the operation is begun. It is the pleasantest method of inhalation anæsthesia for the patient, and also the safest. If the anæsthesia is insufficient it can be continued at any time with ether or chloroform without any harm to the patient.

PETZSCH.

Balfour, D. C.: The Use of Novocaine as a Local Anæsthetic. *St. Paul M. J.*, 1914, xvi, 83.

By Surg., Gynec. & Obst.

That the use of local anæsthesia is growing in popularity in this country is noticeably apparent. This is probably due to the fact that superior derivatives of and substitutes for cocaine have been placed on the market. The more familiar of these are eucaine, stovaine, tropococaine, novocaine, urea, and quinine hydrochloride. Novocaine is rapidly soluble and the solution can be boiled without destroying its effectiveness. In poisonous doses spasms occur; the safe maximum dose is about 7 grains. The duration of the anæsthesia when used without an adjuvant is 15 minutes (Hertzler), but its action is more prolonged when adrenalin is added.

The advantages obtained in the use of this preparation are definite and important; the most satisfactory of which is that the solution — one-half to one per cent — can be used in almost unlimited quantities without fear of ill effects. This permits a wide infiltration of the operative field with liberal blocking off of the sensory nerve supply, which is not true of cocaine, except when used in such large dilutions that its anæsthetic properties are depend-

ent to a considerable extent on the œdema produced and not to the cocaine in actual use. The fact that the novocaine solution can be boiled without effecting its analgesic property is a decided advantage. We have not had sufficient evidence to show that healing of wounds is definitely retarded by the infiltration of the tissues by the solution.

The use of novocaine is indicated in (1) Ligation of arteries, particularly those of the thyroid, removal of small tumors of the breast, superficial cysts, lipomas, circumcisions, paracentesis, external hæmorrhoids, drainage of abscesses, excision of isolated glands and specimens of tissue for diagnosis, tonsillectomy in the adult, and various operations on the eye, nose, and throat; (2) cases in which a general inhalation anæsthesia is preferable but might, for some reason, be deleterious to the patient. In this class we have patients with recent acute conditions of the lung, alcoholism, nephritis, myocarditis, etc., or any complication which renders ether not necessarily prohibitive, but rather inadvisable. Under these circumstances, hernia, hydrocele, varicocele, tuberculous epididymitis and similar conditions are very satisfactorily operated on under local anæsthesia. Operations on the thyroid are often necessary with an unstable nervous system and marked degenerative changes in the heart and kidneys. In these cases, also, a local anæsthesia is preferable. (3) A group, relatively small, is composed of those patients who request that a local anæsthesia be used. Few individuals voluntarily choose to have any operation, however slight, done "under cocaine."

The advantages in the employment of novocaine

are almost entirely on the side of the patient, although unfortunately freedom from pain in the infiltrated area is not insured for any length of time following operation, as is claimed for other substances. Interference in the healing of wounds by the devitalization of the tissues has not been observed in cases at the Mayo Clinic to any appreciable degree. Post-operative nausea, vomiting, and thirst are much less frequent in occurrence than after ether anæsthesia, except in cases of severe hyperthyroidism, when the gastro-intestinal disturbance is a part of the disease.

The methods the Mayo Clinic has found satisfactory in preparing and using novocaine are as follows: A sufficient quantity of a one-half or one per cent solution is made by dissolving the novocaine in sterile water. This solution is boiled for a minute or two in some instances and not at all in others, with no definite variance in results noted. Enough adrenalin is added to the solution to make a strength of 1:1000. Thymol nor any other preservative agent is not employed to render the solution stable, a fresh mixture always being made.

In general, the production of a local œdema, allowing a few minutes for the solution to take effect and incising in the œdematous area, has been found safe and satisfactory. In the more extensive type of operation, morphine, $\frac{1}{6}$ grain either alone or, in the case of the hyperplastic goiters, combined with $\frac{1}{200}$ gr. of scopolamine, has been given. In the majority of cases this constitutes a very important adjuvant to the successful use of local anæsthesia of this type.

SURGERY OF THE HEAD AND NECK

HEAD

Kleemann, E.: Experimental Study of the Effect of Extract of Hypophysis from Animals that Have Been Castrated or Had the Corpora Lutea Removed (Experimentelle Ergebnisse über die Wirkung von Hypophysenextrakt kastrierter und der Corpora lutea beraubter Tiere). *Arch. f. Gynäk.*, 1913, ci, 351.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The influence of the hypophysis in raising blood-pressure is well known, as well as its relation to the sexual organs. The author desired to find out whether the effect of extract of hypophysis on the peripheral blood-vessels would be changed if it were taken from normal animals (rabbits) that had been castrated or from pregnant ones from which the corpora lutea had been removed.

He applied the tests to frogs and reports the results in detail. The extract of hypophysis from castrated as well as from normal animals caused prompt vasoconstriction, but that from the pregnant animals was inconstant in its action, sometimes dilating the vessels, sometimes constricting them. With the extract from animals deprived of the

corpora lutea he got constriction of the vessels four times, also a marked dilatation four times.

The animals from which the corpora lutea were removed had been pregnant for a greater or less time and the pregnancy was interrupted by the removal of the corpora lutea. The blood-pressure experiments in warm-blooded animals were not sufficiently numerous to draw conclusions from. These experiments probably explain the failures in treatment with extract of hypophysis where no vasoconstrictor effect was obtained. In practice, hypophysis preparations should not be made from animals that have recently been pregnant or that have been castrated, at least unless a considerable time has elapsed since the castration. BUSCHAN.

NECK

Schmidt, J. E.: The Carotid Gland and Its Tumors (Beiträge zur Kenntnis der Glandula carotica und ihrer Tumoren). *Beitr. z. klin. Chir.*, 1913, lxxxviii, 301. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author tried to determine by experiments on cats whether the bilateral extirpation of the carotid

gland threatened life, whether unilateral extirpation caused hypertrophy on the other side, and whether autotransplantation was possible. He was led to undertake these experiments by a case of bilateral tumor of the carotid gland that appeared in his clinic. To accomplish complete removal the carotid artery had to be extirpated at the point of bifurcation.

As the animals could not stand the simultaneous bilateral removal of the common carotids the two sides were operated on at intervals of 18 days. After the second operation three cats remained permanently in good general condition, one died after 24 days of pneumonia, one after 10 days of inanition. Bilateral removal of the carotid gland, therefore, does not cause death or cachexia.

The glycosuria observed by Vassale after extirpation was caused by the ether anæsthesia. Anæsthetized normal cats showed sugar in the urine to the same degree as those that had had the gland removed. The sensitiveness to adrenalin was not any greater in the animals that had been operated on than in the normal ones, a circumstance that refutes Frugoni's belief that there is antagonism between the carotid gland and the adrenals. Carotid glands transplanted autoplastically soon degenerated. After extirpation on one side there was no hypertrophic change in the other, from which it may be concluded that the gland has no specific function and is a rudimentary organ. His case history follows:

A 52-year-old woman had had a slowly developing tumor for 20 years, which had grown faster for three months and caused a marked decrease in weight. Under the angle of the left jaw there was a tumor the size of a hen's egg, and on the right, at the bifurcation of the carotid, one as large as a nutmeg. There were signs of tuberculosis at the apex of the lung. The tumor could not be isolated from the vessels, so the carotid had to be resected, after which the common carotid was united with the internal by Enderlen's circular suture. The recovery was uneventful. After the operation there were no cerebral symptoms and no sympathetic symptoms. Seven weeks later the right gland was removed without injury to the vessels, followed by recovery. There was no albumin and no sugar in the urine after the operation. On examination a year later the patient was free from recurrence and in good general health. Moderate atrophy of the left half of the tongue, and deviation to the left when it was extended, showed that the hypoglossus had been injured at the first operation.

WORTMANN.

Da Costa, J. C.: Personal Experience with Tumors of the Carotid Body. *N. Y. M. J.*, 1914, xcix, 253.
By Surg., Gynec. & Obst.

The author has turned from a viewpoint which he held in 1906, that "interference" in carotid body tumors "should be undertaken when serious functional trouble or rapid evolution of an apparently malignant character is present, thus justifying an attempt the consequences of which might be grave."

He now believes that when the carotid body is palpable or visible it is pathological and will probably grow larger, will eventually become malignant, and should be removed at once. If the tumor has reached a size which indicates "functional trouble or evolution of apparently malignant character, the time is probably too late to obtain a cure. The operation and results are highly perilous."

He reports a case of the early type operated on which was well fourteen months afterwards.

The history, description, and post-mortem findings of a case of bilateral tumors, in which he advised against operation on account of the probable great involvement of nerves and vessels, is given.

His conclusions are substantially as follows:

1. The carotid body exists more frequently than was formerly supposed.

Its function is unknown and it should undergo atrophy at or soon after puberty; if it does not atrophy it will probably enlarge and such enlargement should be regarded as a tumor.

2. Tumors of the carotid body are known as peritheliomata.

3. Originally innocent the growths pursue a long course. Rapid growth is exceptional until years have passed; then they take on a rapid growth; this signifies malignancy. The malignant change is sarcomatous with rare exceptions.

4. Growth is almost universally unilateral, the case cited being the only bilateral one found.

5. The growth is closely associated with vessels and nerves and is more retrocarotid than intercarotid. It has a large blood supply carried by the ligament of Mayer and any injury to the body causes profuse hæmorrhage. Its relations render any operation difficult and post-operative complications probable.

6. Involvement of associated nerves will produce symptoms. The tumors are lifted by the pulsating carotid artery; they are movable laterally but not up and down. The author had no case of expansile pulsation.

7. Operative interference is comparatively safe when the tumor is recent and small, but is of grave peril when the tumor is old, and of especial danger if large. The larger it is the more probable it is that ligation of the common carotid or of all the carotids will be necessary in the removal of the growth. Injury and removal of important nerve structures will be almost unavoidable. Early operation may permit its dissection from the carotids, or with tying the external carotid alone. Early operation is imperative because it is easy; late operation is difficult and dangerous.

DONALD GORDON.

Wilson, L. B.: A Study of the Pathology of the Thyroids, from Cases of Toxic Non-Exophthalmic Goiter. *J. Lancet*, 1914, xxxiv, 93.

By Surg., Gynec. & Obst.

Wilson presents the results of a somewhat intensive study of the thyroids from approximately

equal numbers of cases in each of the following groups: (1) 431 thyroids from cases of true exophthalmic goiter; (2) 373 thyroids from cases of non-toxic, i. e., simple goiter; and (3) 374 thyroids from cases of toxic non-exophthalmic goiter. The results of the gross and microscopical examination of the glands are tabulated in parallel columns showing the percentage distribution according to the author's histological classification into early, advanced, and regressing primary parenchymatous hypertrophy and hyperplasia, i. e., an increased amount of functioning parenchyma associated with an increased absorption. The process is an acute one.

"1. The pathology of the thyroid in true exophthalmic goiter is essentially a primary parenchymatous hypertrophy and hyperplasia, i. e., an increased amount of functioning parenchyma associated with an increased absorption. The process is an acute one.

"2. The pathology of atoxic simple goiter is marked essentially by atrophic parenchyma, decreased function, and decreased absorption. The process is a chronic one.

"3. The pathology of toxic non-exophthalmic goiter of Plummer's clinical group 2, i. e., those resembling exophthalmic goiter, is one of increased parenchyma through regenerative processes in atrophic parenchyma or the formation of new parenchyma of the foetal type with an increase in each instance of secretory activity and of absorption. The process is a chronic one but sufficiently active to cause the patient to consult a surgeon earlier than do those patients in clinical group 1.

"4. The nearer the cases of clinical group 2, toxic non-exophthalmics, approach, in age and symptoms, true exophthalmic goiter, the shorter the duration of the period of goiter before operation and the smaller the average weight of the gland at the time of its removal.

"5. The cases of toxic goiter of clinical group 1, i. e., those in which the symptoms are of the cardiovascular variety, much more closely resemble

cases of simple goiter in their pathology in all respects than do the cases of clinical group 2. A larger number of them are of the colloid goiter type; the enlargement of the thyroid has existed for a longer period before operation and the portion of the gland removed is materially larger than in those cases of clinical group 2.

"6. Finally, it may be stated that all the above pathological evidence points to a constant relative association of increased secretion and increased absorption from the thyroid, proportional to the degree of toxicity on the part of the patient. We have as yet no absolute proof that such secretion and absorption is the cause of, rather than coördinate with, the symptoms, but the presented evidence strongly points to that conclusion."

Lewis, W. H.: **Juvenile Hyperthyroidism.** *St. Paul M. J.*, 1914, xvi, 91.

By Surg., Gynec. & Obst.

During eight years ending January 1, 1913, only five cases of exophthalmic goiter occurring in children under 10 years were operated on at the Mayo Clinic. This group of exophthalmic goiters is interesting in that the physiological processes of childhood, differing from those of later life, may have some bearing on the type of disease.

The cases all presented exophthalmos and tachycardia of decided extent; mild irritability was present in four, tremor in three, and vasomotor disturbance of the skin in one. The average length of intoxication was 11 months and 20 days. All these children were quite active and except for the eyes were not apparently inconvenienced.

The average adult case of exophthalmic goiter with exophthalmos of a year's standing has marked general damage of more or less extreme degree.

All of these cases obtained prompt and, to date, complete relief by operation. A double ligation was performed on three patients, and a partial resection in two cases. Experience indicates that ligations are entirely satisfactory.

SURGERY OF THE CHEST

CHEST WALL AND BREAST

Eden, R.: **Surgical Treatment of Pulmonary Tuberculosis, Especially Collapse Treatment** (Beiträge zur chirurgischen Behandlung der Lungentuberkulose, unter besonderer Berücksichtigung der Kollapstherapie). *Arch. f. klin. Chir.*, 1913, ciii, 73. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Eden reviewing the development of lung surgery notes that Mosler and Pepper's injection of disinfectants yielded no results; resections, performed first by Block and Rugier, did not seem to promise much, nor did open treatment of caverns give satisfactory results. Amputation of entire lobes frequently failed from reflex effects, from branches of the vagi being involved at the hilus, from infection

and uncertainty of the closure of the bronchi and from pneumothorax and emphysema of the mediastinum and skin. This operation is justified only by malignant tumors and purulent processes in special locations.

Freund's operation, though it has met with success in many cases, is not generally recognized. Many think that slight affections of the apex may be cured in other ways. Artificial pneumothorax, by the completest possible collapse of the lung, creates conditions favorable to recovery; if this fails thoracoplastic operations may be undertaken. Eden has tested the different plastic operations of the thorax on dogs and gives his conclusions as to the degree of collapse obtained by the various procedures.

Limited resection of the ribs at any part of the thorax only causes narrowing of the thorax and retraction of the lung at that particular place — it has no effect on other parts. Resection over the lower lobes does not influence the upper ones, and *vice versa*. Axillary resection has little effect and has injurious by-effects. Extensive paravertebral wedge resection, strengthened in some cases by parasternal resection, gives the best results. Complete collapse of the lung is obtained, according to Eden, only by the extensive Brauer-Friedrich plastic operation involving the upper ring of the thorax.

The method to be followed depends on the location, kind, and degree of the tuberculosis, but it should be noted that according to Friedrich the cases in which the most improvement took place almost all belonged to the group in which the most extensive resection was performed. The dangers involved in these extensive resections, chiefly the fluttering of the chest wall and mediastinum, are best avoided by operating in several stages.

PLENZ.

TRACHEA AND LUNGS

Meyer, W.: *Bronchiectasis.* *Tr. Am. Surg. Ass.,* N. Y., 1914, April. By Surg., Gynec. & Obst.

The author's aim is to give a picture of the present status of this interesting disease in all its details and phases, as heretofore no exhaustive treatise has appeared in the English language on the subject. The pathological anatomy, etiology, symptomatology, diagnosis, and indication for operation are thoroughly gone over.

Regarding treatment, it may be said that bronchiectasis is to-day a surgical disease, inasmuch as medical, hygienic, and specialistic treatment by the laryngologist can merely alleviate some of the symptoms, but cannot cure the disease. Still, it must be considered a borderland trouble, because, after operation, the patient should pass into the hands of the internist and laryngologist for further treatment. It must be borne in mind that bronchiectasis is an affection of the bronchial tree, not of the pulmonary parenchyma, and that, therefore, methods which have proven of benefit in tuberculosis cannot have the same effect in this disease. Larger cavities of the lung, produced by the confluence of a number of smaller ones, are of course best treated by a free incision, pneumotomy, as in pulmonary abscess. In localized troubles a cure has been observed in a number of cases. The principal treatment is represented by the so-called prolapse-therapy. This can be done in various ways: Compression of the lung by means of gas, fat tissue or plombs, thoracoplasty and phrenicotomy. Thus it has been shown that in somewhat advanced cases, insufflation of the pleural cavity

with nitrogen is absolutely useless. Somewhat better results are promised by the loosening of the lung in conjunction with costal pleura, from the endothoracic fascia (pneumolysis); and filling of this cavity with a transplant of fat tissue or omentum, kept in cold storage (Tuffier). A paraffin plomb often 500 to 1500 grammes in weight may also be of use.

Thoracoplasty, with the resection of a number of ribs, has been found to give good results in a certain number of cases.

The loosening of the lung from its adhesions with the pleural cavity and fastening its base further up on the diaphragm, giving the complementary space a chance to close by granulation, has been found of benefit in one case by Garré.

Sauerbruch and Bruns' method of ligating branches of the pulmonary artery, which has been done seven times by him and three times by the author of the paper, produces marked connective-tissue formation in the affected lobe, and firm adhesion between the pulmonary and costal pleura, thus allowing the lobe to be compressed by thoracoplasty, to be performed later on. However, in not a single case was a real cure obtained, although expectoration was reduced 1 to 3 ounces in 24 hours. The quantity of this expectoration may be still further reduced by reduction of the fluid ingested (thirst-cure), and the character of the expectoration further improved by the inhalation of superheated medicated air, with the help of the hot-air douche, or by the direct application of fluids blown into the bronchi by means of various apparatus.

Only the removal of the diseased lobe or lobes of the lung — pneumectomy — can really cure these patients, and the efforts of surgeons interested in this chapter will certainly have to be continued in the direction of overcoming the obstacles to this radical interference, which, however, at least for the present, must be the last resort.

There are eight pneumectomies for bronchiectasis on record, with a mortality of 50 per cent.

PHARYNX AND ŒSOPHAGUS

Green, N. W.: *An Œsophagoscope with Direct Outside Illumination.* *Ann. Surg., Phila.,* 1914, lix, 195. By Surg., Gynec. & Obst.

An Œsophagoscope is described which was conceived and used by the author with the idea (1) of obtaining a strong projected illumination with a minimum of light reflexes, (2) of having electrical connections as simple as possible, and outside the tube, and (3) to be able to sterilize the entire instrument, except the ocular and electric light.

PHILLIPS M. CHASE.

SURGERY OF THE ABDOMEN

ABDOMINAL WALL AND PERITONEUM

Hartmann, J.: Sensitiveness of the Peritoneum and the Abdominal Fascia (Zur Sensibilität des Peritoneums und der Bauchfascien). *München. med. Wchnschr.*, 1913, lx, 2729.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author, in order to determine the relative sensitiveness of the different human tissues, had himself operated on for an umbilical hernia without anæsthesia. In this operation he observed that the laying bare of the fascia when done with a sharp knife was almost painless, but when the scissors were used there was pain. On cutting the edges of the fascia the pains were similar to those of an electric shock; they appeared in a circle around the ring of the hernia and then irradiated to the left and downward toward the penis. This relative appearance of the pain, which was the same at whatever place the fascia was cut, he regards as typical for fascia. He says that the sensitiveness of the parietal peritoneum was much less than that of the fascia. Ligation of the omentum was only slightly painful, and the sponging of the tissue was much more painful than the knife. He believes that a man with strong will could for the sake of experiment have his appendix removed without anæsthesia, which would give valuable information in regard to the sensitiveness of the inflamed peritoneum of the abdominal cavity. GLASS.

Hirano, T.: Practical Experience in the Use of Horse Serum to Increase the Resistance of the Peritoneum to Infection (Über die praktischen Erfahrungen von Anwendung des Pferdeserums zur Resistenzvermehrung des Peritoneums gegen Infektion). *Deutsche Ztschr. f. Chir.*, 1913, cxxiv, 525.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author's work is a further contribution to the attempts to increase the resistance of the peritoneum by creating a leucocytic reaction. Normal, non-specific horse serum was injected intramuscularly in 34 patients: adults were given 40.0, children half as much. It was used exclusively in abdominal diseases, 10 of which were not operated on, but the effect of the serum in these cases was not definite. In continuous severe infections it had no results, but in post-operative irritations of the peritoneum it had a favorable effect. The author thinks he is justified in asserting that the injection of horse serum increases the resistance of the peritoneum and he recommends it as an adjuvant and preventive of infection. KREUTER.

Credé, B.: Antiseptic Treatment of Peritonitis (Antiseptische Behandlung der Peritonitis). *München. med. Wchnschr.*, 1913, lx, 2117.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author recommends the treatment of diffuse peritonitis by a method which he has used for ten

years and by which he has decreased the mortality of his cases to 28 per cent. The method consists in drainage of the abdominal cavity, without preceding eventration or irrigation, by means of silver-gauze drains in several directions. Local and general disinfection is accomplished by pouring 20 to 50 gm. of a one per cent collargol solution into all the diseased parts of the abdominal cavity and on all the intestinal loops, and general sepsis is combated by putting two or three 0.05 collargol tablets in the gauze tampons. These tablets act energetically, by absorption, as intravenous injections. He also gives intramuscular injections of senna after the operation and gives salt solution abundantly, subcutaneously, intravenously, and per rectum, by the drop method. He adds 50 ccm. of a 10 per cent calodal solution to every 500 ccm. of the salt solution. BLEZINGER.

Lebedeff, G. I.: Menge's Radical Operation for Hernia of the Linea Alba (Radikaloperation der Herniæ lineæ albæ nach Menge). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, xxviii, 1541.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The patient was a 38-year-old II-para, whose last delivery had been 5 years before. After the first delivery the patient had noticed a slight swelling to the left of and below the umbilicus. After each successive delivery it became larger and at the time of examination was as large as the head of a new-born infant. There were attacks of severe pain and a rise in temperature. The operation consisted of a transverse incision through the highest point of the hernia 25 cm. long; the hernial sac was freed, and the peritoneum opened—the content of the hernia was found to be omentum and intestine. The hernial sac and atrophic tissue together with some skin were removed, and the edges of the rectus muscles were laid bare and removed from their sheaths. The posterior aponeurosis was atrophic. The suturing was done in three layers, viz., (1) suture of the peritoneum in the longitudinal direction; (2) suture of the rectus muscles in the longitudinal direction; (3) the anterior leaf of the aponeurosis was cut transversely and sutured. Healing was by first intention. GINSBURG.

Landmann, K.: Menge's Radical Operation for Umbilical, Subumbilical, Epigastric, and Post-Operative Hernias of the Linea Alba (Über die Radikaloperation der umbilicalen, subumbilicalen, epigastrischen und postoperativen Hernien der linea alba nach Menge). *Dissertation*, Heidelberg, 1913.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Ten years ago Menge emphasized the advantages of uniting the rectus sheath transversely and the muscle vertically. To avoid weakening the midline by the splitting of the anterior sheath of the rectus he proposes a modification.

Menge's typical operation is as follows: Transverse skin incision; laying bare and trimming of the hernial ring; tying off the sac; transverse incision through the anterior sheath of the rectus, and shelling out of the muscle; then a vertical incision through the posterior sheath of the rectus and the peritoneum; vertical suture of the peritoneum alone or with the posterior aponeurosis; union of the recti in the midline; and transverse suture of the fascia and skin. He has used this operation in his clinic in 58 cases; 6 umbilical hernias; 21 hernias of the linea alba, one of which was not operative; in 2 cases hernia of the linea alba together with one of the umbilicus; in one case of umbilical hernia associated with epigastric hernia; in the other 9 cases there was only marked diastasis of the rectus muscle and in 7 of these cases there was a decidedly pendulous abdomen. In 18 patients another operation was performed at the same time: in 10 cases through the same laparotomy opening; 6 times there were subcutaneous hæmatomata, but no subfascial ones; death resulted in 2 cases, once from peritonitis and once from thrombophlebitis in a pregnant woman.

The presence of a hernia is only a secondary indication for Menge's operation if there is diastasis of the rectus muscle or pendulous abdomen, for the symptoms of these abnormalities of the abdominal wall are often quite as important as those caused by the hernia, and Menge's operation is designed not only to remove the hernia but to restore the normal anatomical condition of the abdominal wall. He believes his operation is indicated even in very small hernias. Of the first 48 cases operated on, 14 were free of symptoms when examined later. The chief advantages of Menge's operation are: (1) The use of the transverse fascia incision; (2) Biondi's crossed lines of suture; and (3) the plastic operation on the abdominal wall to cover the hernial opening.

Fritz Loeb.

GASTRO-INTESTINAL TRACT

Rodman, W. L.: Gastric Tetany. *J. Am. M. Ass.*, 1914, lxii, 590. By Surg., Gynec. & Obst.

Rodman reports an interesting case of gastric tetany, which came on eleven days after a successful drainage operation, at which time the stomach was markedly dilated and a large ulcer was found on the distal side of the pyloric vein. This patient made a satisfactory recovery, leaving the hospital 31 days after the operation, and is well to-day.

It is interesting to note that in practically all of these cases, observed closely either at operation or at necropsy, there has been a dilatation of the stomach, and this has been consecutive either to a benign or malignant obstruction of the pylorus.

None of the theories as to the etiology of this disease are entirely satisfactory, but Robson believes that gastric tetany is due to an absorption of stagnant contents of a dilated stomach which poisons the nerve-centers and thereby increases reflex irritation.

Medical treatment is practically a failure. According to Brown and Engelbach, at least 88 per cent of the cases die. Surgical treatment is usually successful. It consists of a drainage operation to relieve the over-distended and irritable stomach.

Frequent and thorough lavage of the stomach does a great deal of good in lessening the number and severity of gastric spasms and general convulsions, but does not prevent them.

Rodman is unable to explain the presence of pints and occasionally quarts of the greenish secretion which would usually be removed from the patient in whose stomach were two openings, a patent pylorus and a gastro-enterostomy more than two and one-half inches in width, and in whom obstruction, due to kink in the jejunum, could be eliminated.

Buttermilk was the ideal nourishment in this case. Other foods apparently caused fermentation, soon followed by nausea, eructations, and vomiting, conjoined with depression and evidences of general toxæmia.

LEO G. DWAN.

Cole, L. G.: The Positive and Negative Diagnosis of Gastric Cancer, by Means of Serial Röntgenography. *N. Y. M. J.*, 1914, xcix, 305.

By Surg., Gynec. & Obst.

The author compares the method of diagnosis by serial röntgenography of gastric carcinoma with exploratory laparotomy. His opinions are based on a study of 616 cases, 97 of which underwent operation. He considers the diagnosis can be made with as great a degree of accuracy, and the röntgenological method has the advantage of being without risk to the patient.

Ordinary röntgenoscopy or röntgenography will not suffice for diagnosing small indurated ulcers or early carcinoma. The author is not content with less than 40 röntgenograms, and he frequently makes 70 or 80. These are made with the patient in the prone and erect postures and at various intervals after the ingestion of the barium. The plates should be set up and studied individually and collectively and superimposed for comparison. The röntgenological diagnosis is based on permanent, constant deformities in the gastric wall which interfere with the progression of the peristaltic wave pylorusward. The appearance depends on the nature and form of the growth. This method of diagnosis is of value also in advanced cases, for by it the location and extent of a tumor and the surgical procedure can be determined. Exploratory operations in inoperable cases can in most cases be rendered unnecessary.

WM. A. EVANS.

Cole, L. G.: The Diagnosis of Postpyloric or Duodenal Ulcer by Means of Serial Radiography. *Med. Press & Circ.*, 1914, xcvi, 143.

By Surg., Gynec. & Obst.

The author bases his diagnosis of "postpyloric ulcer," i. e., an ulcer occurring in the first portion of the duodenum, upon constantly recurring deformities of the cap or sphincter caused by the induration

or cicatricial contraction surrounding the crater of the ulcer. There may be associated a pouching or dilatation of the uninvolved portion of the cap, and this pouch may retain a portion of the bismuth meal for an extended period after the stomach has emptied itself, constituting an additional indication of the presence of an ulcer.

Little reliance is to be placed on so-called "flecks" where bismuth is supposed to adhere to the ulcer. Healed ulcers may cause definite irregularities which can be shown röntgenographically, but which are with difficulty detected at operation or autopsy.

Adhesions to the cap secondary to gall-bladder disease may cause distortion which cannot be differentiated exclusively by the röntgen ray from those due to postpyloric ulcer.

ADOLPH HARTUNG.

Kolb, K.: Wilms' Method of Ligating the Pylorus with Fascia: Ligamentum Teres and Omentum as a Substitute for Unilateral Exclusion of the Pylorus (Über die Ersatzmethoden der unilateralen Pylorusausschaltung: Pylorusumschnürung mittelst Fascie, Ligamentum teres hepatis und Netz nach Wilms). *Beitr. z. klin. Chir.*, 1913, lxxxviii, 1.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author discusses the steps which have led from Von Eiselsberg's unilateral exclusion of the pylorus to the much less harmful method of ligating the pylorus, and cites Bogoljuboff's experiments, which in 1908 showed the possibility of producing stenosis of the intestine by means of transplanted strips of aponeurosis.

Independently of Kolb, Wilms began his experiments in 1911, to close the pylorus in ulcer of the duodenum with transplanted fascia, and with his scholars developed the method experimentally. Fascia lata was used without producing any harmful effects to the place from which it was removed. The pylorus was brought together with strips, 3 cm. broad and 8 to 19 cm. long, so that the mucous surfaces were in apposition.

The secondary contraction of the fascia—cicatricial contraction—which the author had demonstrated in animal experiments, made a firmer ligation unnecessary. The place where the strips of fascia crossed was fixed with a suture, and the ends were sutured to the ring of fascia, and the latter kept from being displaced by being fastened with sutures to the serous and muscular coats of the pylorus.

Of 15 cases of ligation of the pylorus which the author describes in detail, 9 were ulcer of the duodenum or pylorus; 1 ulcer of the stomach; and 5 dilatation of the stomach and stenosis of the pylorus from adhesions. The cases and modifications of the operation by other authors are also considered.

He reports a case of ligation of the pylorus with ligamentum teres and three in which omentum was used; the ligamentum teres was used in the same way as the fascia only it was drawn tighter. In

using the much less elastic omentum the pylorus was crushed, ligated with a silk-suture and the omentum fastened in the same way as the strips of fascia. The postulate that the pylorus shall be impenetrable to chyme and the duodenum shall not fill even after hours was completely fulfilled. The examinations extended to 148 days after the operation.

From his experiments, Kolb thinks ligation with fascia is the safest method, and that bad results can come only from errors in technique; omentum is the next best material. Judgment cannot be passed as to ligamentum teres as the author's case, in which the result was satisfactory, is the only one known.

WOLFF.

Whipple, G. H., Stone, H. B., and Bernheim, B. M.: Intestinal Obstruction. III. The Defensive Mechanism of the Immunized Animal against Duodenal Loop Poison. *J. Exp. Med.*, 1914, xix, 144.

By Surg., Gynec. & Obst.

The authors found that an immunity was produced in dogs against lethal doses of duodenal loop poison by means of repeated small doses of the loop fluid from dog, cat, or human. The immunity disappears in a few weeks. The sera of immune dogs were found to be inactive when incubated with duodenal loop fluid. The organ extracts and emulsions from immune dogs rapidly destroy the loop poison during incubation *in vitro*.

JAMES F. CHURCHILL.

Whipple, G. H., Stone, H. B., and Bernheim, B. M.: Intestinal Obstruction. IV. The Mechanism of Absorption from the Mucosa of Closed Duodenal Loops. *J. Exp. Med.*, 1914, xxx, 166.

By Surg., Gynec. & Obst.

The authors have shown in previous papers that a toxic substance is formed in a closed duodenal loop. The experiments of the present paper show that the intoxication is identical whether the loop is left empty at operation or is filled with a lethal dose of loop fluid. This emphasizes the fact that absorption of the poison is essentially from the mucous membrane rather than from the contents of the closed loop. The intoxication is not influenced by the presence of bile, pancreatic secretion, or gastric juice. Cessation of the normal flow of intestinal fluids which bathe the mucous membrane may be essentially responsible for the perverted activity of the mucosa and secretion of a toxic substance in the blood.

JAMES F. CHURCHILL.

Hausmann, T.: Different Forms of Cæcum Mobile (Die verschiedenen Formen des Cæcum mobile). *Mitt. a. d. Grenzgeb. d. Med. u. Chir.*, 1913, xxvi, 695.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author distinguishes the following various kinds of movable cæcum: (1) Cæcum mobile due to a long common mesentery, in which the cæcum can easily be pulled far out of the abdomen on laparotomy. (2) Cæcum mobile due to flaccid,

slack retrocæcal tissue and short, elastic mesentery. (3) Cæcum mobile with a short cæcal mesentery, but a long mesentery of the ascending colon and hepatic flexure. This form permits a marked displacement of the ascending colon and hepatic flexure to the left, and the cæcum is twisted on its long axis so that its head is directed toward the right and its long axis runs from below on the right, upward, and to the left.

Cæcum mobile is frequently not recognized because of the short cæcal mesentery, but as it may cause serious symptoms, the author recommends operative treatment. The surgeon must not be content, on opening the abdomen, to ascertain the length of the cæcal mesentery, but must examine the conditions of fixation of the hepatic flexure and ascending colon.

NEUPERT.

Sonnenburg, E.: Changes in Views Regarding Appendicitis (Die Appendicitis einst und jetzt). *Berl. Klin. Wchnschr.*, 1913, I, 2313.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

There have been great advances in the knowledge of appendicitis (1) in a correct understanding of acute appendicitis, the operative treatment of its early stages and avoidance of complications; (2) an increased understanding of the peritonitis that accompanies appendicitis; (3) a clearing up of the differential diagnosis of chronic inflammatory processes in the ileocæcal region.

Sonnenburg does not entirely agree with Aschoff that every case of appendicitis begins with a phlegmonous inflammation of the walls; he believes that the attack of appendicitis is often an extension from the colon, or that a cumulation of toxic substances or bacteria in the lumen may lead to severe irritation of the walls without histological changes. The quantitative leucocytosis shows us whether the body is in a position to overcome the infection. Arnet's method with Kothe's modification is valuable in this particular.

The theories of cæcum mobile and habitual torsion of the cæcum found adherents, but catarrhal symptoms, typhlocolitis, have been found to be the point of origin of the attacks and of the changes and adhesions in the ileocæcal region. Collection of fæces in the appendix, which was formerly denied, is now recognized. It is now a recognized fact that the so-called chronic appendicitis is often to be attributed to inflammations of the cæcum and ascending colon with adhesions and kinks, and swelling of the lymphatic glands, and that moreover chronic appendicitis may be cured by removing the sources of disturbance in the region of the hepatic flexure.

ZUR VERTH.

Adami, J. G.: Chronic Intestinal Stasis, "Auto-Intoxication" and Subinfection. *Colo. Med.*, 1914, xi, 34.

By Surg., Gynec. & Obst.

Adami discusses in detail and seeks for the etiological factors of the many symptoms which result directly from the so-called "auto-intoxica-

tion" of chronic intestinal stasis. He states that Lane has recorded no less than seventeen outstanding symptoms as directly due to stasis, together with eight maladies indirectly due to the same cause. These, it is said, are merely the most important results of stasis.

Lane brought forward, says Adami, 17 patients and their case reports as evidence that these various conditions can be cured or definitely ameliorated by short-circuiting the large intestine; by removal of the colon, or by insertion of the lower end of the ileum into the pelvic colon; by removal of obstructing bands, or by performance of gastrojejunostomy to overcome duodenal obstruction; and Adami says: "To-day I want to consider, not as a clinician, but as a pathologist, how far we may reasonably accompany Sir Arbuthnot; to what extent his doctrine is to be accepted."

The term "auto-intoxication" as applied first by Bouchard in 1887 is a misnomer and is not used to designate alone the poisonings due to excess or defect of the products of metabolism, to the disordered working of the body-cells themselves or to disintegration of cells or the products of dissociation of dead tissue, but it is rather employed to designate poisons produced by invading bacteria or toxins absorbed from the intestinal tract which later is in reality extrinsic to the body; and Adami, in short, calls it "a means to cloak our ignorance in a garment of pretended knowledge."

Adami believes that Lane has not gone far enough, for he states that in a long survey of the anatomical relationships of the viscera, Geddes finds that constantly where he has encountered Lane's and other bands of like nature, he has found a lax abdominal wall with more or less atrophy of the recti and other muscles, and that the cause of visceral displacement is lack of due support; to remedy this should be the first object of preventive medicine and surgery. It is the author's belief that these bands are non-inflammatory in origin and are formed by what he calls stress hypertrophy of the connective tissues produced by the pull of the badly supported bowel on its mesenteric attachments.

In removing the colon or putting it out of use by short-circuiting as Lane suggests, because he considers it a "cesspool" of the body, is a fallacy, because the colon absorbs great quantities of fluids which contain much foodstuffs in a soluble state, and this concentration arrests bacterial activity. Putrefaction is also prevented and most of the bacteria in the fæces are dead without having undergone lysis. Adami suggests that abdominal massage may be a better way of restoring the natural tone to the walls and viscera.

Intestinal intoxication may be attributed to any of the three following causes: (1) The products of disintegration of foodstuffs by the digestive juices; (2) the products of disintegration of foodstuffs by bacterial activity; and (3) the ectotoxins discharged by the intestinal bacteria.

For the first condition Adami says that, in the

light of our present knowledge, it is not the digestive fluids that by their action on foodstuffs induce Lane's symptoms. Concerning the products of disintegration by bacteria, the indol group, containing scatol, phenol and cresol are the only poisonous substances to be considered; and these are not taken up or absorbed by the colon, for when indican occurs in the urine in any considerable quantity it means that there is an intestinal obstruction high up, above the ileocaecal valve. It is interesting that, under the third condition,—namely, bacterial ectotoxins,—we find that the bacteria usually found in the intestinal tract have no ectotoxins, and as they do not undergo bacteriolysis, according to Vaughan, no endotoxins are formed.

The main issue of Adami's paper and the point that he lays most stress upon is that all the symptoms, or nearly all cited by Lane, may be explained by subinfection. He calls attention to the fact that where Lane made blood cultures on his cases of stasis he found them positive, either bacillus coli or a streptococcus being present. As regards the rheumatic aches and myositis he cites the work of Rosenow in Chicago in which he isolated a strain of streptococcus with which he was able to cause lesions of myositis in animals. In a like manner it has been shown that infections with bacillus coli will cause subnormal temperature and mental symptoms.

Thus Adami concludes that it is more rational to regard the evil effects of intestinal stasis as a result of conditions favoring subinfection and low forms of infection, than as a result of chronic intoxication. The nature of the organism responsible for the disturbance and its probable seat of entry should be discovered and other means of procedure taken, before operation is advised.

EUGENE CARY.

Case, J. T.: The Röntgenologic Findings in Malignant Obstruction of the Colon. *Lancet-Clin.*, 1914, cxi, 216. By Surg., Gynec. & Obst.

In a discussion of this rare condition, Case advises the bismuth examination of the entire alimentary tract, inasmuch as the malignant disease of the colon is usually metastatic or due to an extension from the stomach, pancreas, or gall-bladder. He advises the röntgen study of a suspected bowel obstruction before the introduction of any bismuth, because there is often a very marked gas distention of the colon permitting its delineation from the cæcum to the seat of the obstruction.

When the patient is before the vertical fluoroscope it is often possible to note the levels of air and fluid in the two limbs of the splenic flexure and thereby determine the presence of antiperistalsis by noting the change in the fluid level. Case maintains that the prevailing peristaltic activity in the right half of the colon, even under normal conditions, is antiperistalsis, which is normally interrupted by strong peristaltic waves in the onward direction, which carry the food from the right half of the bowel into the left half, where the peristaltic influence is

distalward. In cases of acute or chronic colonic obstruction there is exaggerated antiperistalsis, and Case believes this to be a sign of serious bowel obstruction.

In suspected colonic obstruction he favors the study of the colon with the bismuth enema first, upon a horizontal fluoroscope of the Haensch type. His opaque enema consists of barium sulphate, 3 oz.; alcohol, 2 dr.; gum tragacanth, 140 gr., and water, 2 pts., at a temperature of 100° F. The onward progress of the head of the entering enema should be carefully watched inch by inch. Even in early carcinomata it will be found that the head of the column halts at the sight of the tumor, and the distal colon balloons out under the pressure of the bismuth injection. After a few moments a finger-like bismuth shadow may be observed, appearing a little distance beyond the apparent head of the bismuth column; afterwards the bismuth may pass on and completely fill the colon. The finger-like process which one observes in these cases represents the bismuth in the narrowed lumen of the bowel corresponding to the site of the tumor. Except in the very smallest lesions there will be most likely a filling defect in the shadow of the large bowel corresponding to the location of the growth.

The significant X-ray finding in these cases in connection with the bismuth meal is stasis above the sight of the tumor, often accompanied by dilatation above the site of obstruction. Frequently fecal masses in the bowel proximal to the carcinoma itself often lead to erroneous conclusions, as to the actual size and site of the neoplasm, and the inclination is to estimate the site of the tumor to be higher than it really is. Waiting twenty-four hours until the fecal tumor or mass is invaded by bismuth is advisable. Case summarizes the X-ray findings in carcinoma of the large bowel as follows:

1. Exaggeration of the normal antiperistalsis, giving the appearance of "peristaltic unrest" to the bismuth content above the site of the obstruction.
2. Arrest or hindrance in the onward progress of the bismuth meal.
3. Arrest or noticeable hindrance in the ascent of the bismuth stream when a bismuth enema is given.
4. Coincidence of a palpable tumor with the point of hindrance in the progress of the bismuth meal or the bismuth enema.
5. A filling defect in the shadow of the bismuth filled colon. Frequently the filling defect is digitated, indicating a cauliflower growth; at times it may be annular so that an annular carcinoma may be diagnosed.
6. The amount of bismuth enema which may be injected is often indicative of the site of the lesion.
7. The colon is often markedly distended by gas, and gas collections are seen surging backward and forward, due to the alternations of peristalsis and antiperistalsis.
8. Marked ileal stasis when the neoplasm involves the cæcum, ileocaecal valve, or the first part of the ascending colon.

Attention should again be drawn to the fact that not all the foregoing signs are necessarily characteristic of malignant bowel obstruction; they are most of them true of many forms of serious benign bowel obstruction.

EDWARD SKINNER.

Lardennois, G., and Okinczyc, J.: The Dissection and Preservation of the Great Omentum in Total or Partial Colectomy (La Libération et la conservation du grand épiploon dans les colectomies totales ou subtotaies). *Bull. et mém. Soc. Anat. de Par.*, 1913, xv, 429. By *Journal de Chirurgie*.

In the description of two cases of partial colectomy the authors emphasize the special method of operation they employed with a view to sparing the great omentum. The great omentum is made up of two layers, the one direct, the other reflected, which become adherent to one another and to the upper surface of the transverse mesocolon. The vessels of the omental and mesocolic layers remain independent of one another and the two layers can be separated without injuring any important vessels.

To proceed safely with this dissection the border of the omentum should be raised to the level of the flexures of the colon and the splitting be made from without inwards. This is more difficult when there are inflammatory adhesions, but the authors believe it is almost always possible.

This method, which is applicable in extensive colectomies for other conditions than cancer or tuberculosis, has the following advantages: (1) The freeing of the great omentum brings the colic arteries into view and allows of their isolation without making large pedicles. (2) After removal of the colon the omentum spontaneously covers over the incisions in the mesocolon. (3) Its mass sustains the abdominal viscera which show a tendency to prolapse because of the extensive resection. Moreover, it is important to the abdominal cavity to preserve this organ, for its defensive powers are well known.

P. MASSON.

Mayo, C. H.: Factors of Safety in Intestinal Surgery. 1914, xviii, 65.

By Surg., Gynec. & Obst.

Attention is called to certain factors of safety associated with surgery of the gastro-intestinal tract.

In the treatment of cases of gastric dilatation, the stomach should be kept empty and washed at least every four hours, three or four times, or until the contents show that a longer interval will suffice. To relieve the congestion of the superior mesenteric artery, the patient should be turned on his side or even upon his abdomen.

Following anterior gastro-enterostomy, angulation of the bowel throwing an undue amount of bile into the stomach may occur and should be prevented. A good plan in these cases is to unite the intestine to the stomach one inch on either side of the opening; the bowel thus runs past the opening in the stomach instead of hanging from it.

In performing jejunostomy in cases in which a large portion of the stomach is involved, the method of inserting a rubber tube into the jejunum which is attached to the abdominal wall at the point of entrance makes an effective method of feeding.

Enterostomy may be an important procedure as a safety valve in cases of obstruction of the bowel following abdominal operations. The administration of rectal fluids are necessary adjuncts in the treatment of various types of these cases.

In many cases of cancer of the large bowel in which obstruction has occurred, relief may be obtained from gases anterior to the obstruction by appendicostomy, passing a catheter through it into the cæcum. In addition, it may be advisable to thoroughly divide the sphincter ani and possibly divide the muscle.

In posterior extirpation of the rectum for cancer the sigmoid should be left tied to obstruct for three days. Whether or not it be left as a sacral anus or drawn through the anal ring and attached about the structure, contamination of the surface of the wound will be prevented and healing greatly hastened.

LIVER, PANCREAS, AND SPLEEN

Thompson, J. E.: Pleural and Pulmonary Complications in Tropical Abscess of the Liver. *Tr. Am. Surg. Ass.*, N. Y., 1914, April.

By Surg., Gynec. & Obst.

The influence of the absence of peritoneum over a part of the upper surface of the liver on the extension of infection towards the pleural cavity was discussed and it was concluded that the presence of the peritoneal cavity is no barrier, but that infection spreads with equal ease in all directions.

Infection of the lung and pleura occurs in one of two ways: (1) by direct extension, (2) by metastasis. The former method is by far the commonest. Metastatic abscesses have been found not only in the lungs but in the brain.

When the abscess opens into the pleural cavity, it may do so either gradually or suddenly, the former method being the rule.

If the abscess penetrates the lung and opens into a bronchus, the patient spits up chocolate-colored pus, the quantity being sometimes very considerable. Spontaneous cures have been reported where the abscess was completely evacuated by this route; it is, however, a rare termination. Usually the liver abscess empties itself partially and continues to drain intermittently through the lung. Amœbic infection spreads to the lung and produces cavitation there. In many instances the liver abscess heals completely, but the cavity in the lung persists and increases in size, eventually killing the patient. In such instances the patient spits chocolate-colored pus to the end, the source of the pus being the cavity in the lung.

The prognosis is very unfavorable. Many authors place it as high as 84.8 per cent. The author's mortality was 45.4 per cent. If, however, every case

could be followed it would be found that at least 57 per cent died from the complication.

The treatment was considered under two heads:

1. Purulent extravasations into the pleural cavity should always be drained, and an attempt made to place a drainage tube into the abscess cavity in the liver.

2. Abscesses opening directly into the lung should be treated conservatively for a time, because some heal spontaneously. If, however, they drain badly and the patient is losing ground, they should be attacked boldly by the transpleural operation and the cavities in both the lung and the liver drained.

Cole, L. G.: The Röntgenographic Diagnosis of Gall-Stones and Cholecystitis. *Surg., Gynec. & Obst.*, 1914, xviii, 218. By *Surg., Gynec. & Obst.*

The röntgenographic indications for gall-stones may be either direct or indirect. Direct evidence consists of a characteristic localized area of increased density, corresponding in size and shape with a calculus. Indirect evidence is afforded by an alteration in the lumen of the stomach, cap or hepatic flexure of the colon, caused by adhesions from an accompanying cholecystitis. In 30 per cent of the cases examined, the lesion was detected solely by indirect evidence, and in 60 per cent of the cases the indirect evidence was a most important factor.

Gall-stones must be differentiated from renal calculi and other calcareous bodies such as calcified costal cartilages. Biliary calculi show more distinctly and appear smaller when the plate is placed on the abdomen than when it is placed on the back. The opposite is true of renal calculi.

When there is a calcareous coating to a cholesterol nucleus, biliary calculi cast a ringlike shadow, while renal calculi seldom if ever have this appearance. When three or more biliary calculi are present they are likely to have faceted surfaces, which are readily recognized röntgenographically. If more than one renal calculus is present, one is usually larger than the others. Moving the tube from side to side alters the relation of a biliary calculus to the kidney, but it does not alter the relation of a renal calculus to the kidney.

Adhesions from cholecystitis so closely resemble adhesions and cicatricial contraction from prepyloric or postpyloric (duodenal) ulcer that it is sometimes difficult to differentiate between them. Gall-bladder infection is usually more extensive. It involves the greater curvature and draws the stomach to the right, causing an angulation of the cap. The cap may be involved in the adhesions, but not more so than the pyloric end of the stomach. There is no evidence of a localized area of induration of the cap, and obstruction of its lumen is not as frequent as in cases of duodenal ulcer.

Indirect evidence of gall-stones is of more clinical value than the detection of the calculi themselves, because the adhesions represent an accompanying infection, requiring surgical intervention, while a

gall-stone without infection may remain in the gall-bladder indefinitely without causing symptoms.

Gall-stones may be detected often enough to justify a röntgenographic search for them, but the absence of any direct evidence does not justify a negative diagnosis and should not prevent surgical intervention, provided it is clearly indicated by the history.

Eppinger, H.: Pathology of the Function of the Spleen (Zur Pathologie der Milzfunktion). *Berl. klin. Wchnschr.*, 1913, l, 1509.

By *Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.*

Several cases in which splenectomy was performed for hypertrophy of the spleen form the basis of the following conclusions:

1. The icterus from which patients with hypertrophied spleen often suffer generally disappears after splenectomy. By measuring the iodine in the lipoids of the blood freed from cholesterol, the author confirmed King and Medak's assertion that there is a parallelism between hæmolytic processes and a high iodine content. The iodine content sinks after removal of the spleen, and the fat content of the blood increases, as experiments on dogs have also shown. Blood examination showed very high iodine content in pernicious anæmia, cirrhosis of the liver, hæmolytic icterus, and cardiac stasis.

2. It is desirable in clinical blood examination to take account of the number of erythrocytes formed and destroyed. By demonstrating the urobilin in the stools by Charnass's spectrophotometric method, the amount of destruction of erythrocytes can be measured to a certain degree. There is a high urobilin content in primary anæmia, hæmolytic icterus, malaria, lead poisoning, and pneumonia, while it is low in anæmia from carcinoma, post-partum anæmia, etc.

3. The urobilin content after extirpation of the spleen in hæmolytic icterus and pernicious anæmia is very much lower and the patients recover well.

4. Splenectomy has been performed with good results thus far in 2 cases of hæmolytic icterus, 2 of pernicious anæmia, 3 of the so-called Banti's disease, 2 of hypertrophic cirrhosis of the liver, and 1 of grave catarrhal icterus. There were no deaths, but after splenectomy there was often an idiopathic fever.

5. The spleens in pernicious anæmia and hæmolytic icterus were very much alike: they were crowded with erythrocytes. There seems to be a parallelism between the hæmolysis of the spleen and the amount of blood in it. This is true also in conditions of cardiac stasis, to judge from the urobilin content of the stools.

6. In cases with marked hæmolytic processes the liver also was found to be functioning pathologically. It seems that conditions such as hypertrophic cirrhosis of the liver are due to primary disease of the spleen; perhaps the severity of many primary hepatic diseases, such as alcoholic cirrhosis, depend on the greater or less hæmolytic activity of the

spleen. The cases which were improved by splenectomy seem to have been characterized by an abnormal increase in splenic function. As a means of defense against this, an increased activity of the bone-marrow developed. In increased hæmolysis therapeutic measures should not be directed toward the bone-marrow (tonics), but toward the spleen (splenectomy).
G. B. GRUBER.

MISCELLANEOUS

Kawasoye: Anatomical Changes in the Abdominal and Thoracic Organs, Especially the Peritoneum in Animals, after the Intraperitoneal Injection of Camphorated Oil (Über die anatomischen Veränderungen an den Bauch- und Brustorganen, insbesondere am Peritoneum von Thieren nach intraperitonealer Campherölinjektion). *Arch. f. Gynäk.*, 1913, ci, 100.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Intraperitoneal injection of camphorated oil into rabbits almost always causes the reactive peritonitis described by Hoehne. The experiments were performed on 43 rabbits. The author agrees

with Hoehne that this is to be regarded as a foreign body peritonitis. Three successive stages can be distinguished: (1) The stage of endothelial proliferation and leucocyte infiltration; (2) the stage of fibrin formation; and (3) the stage of organization and slow absorption of the oil. The injection of one-half ccm. of one per cent camphorated oil to 100 gms. of body weight does not have a toxic effect on the rabbit. Fat embolus of the lung cannot be absolutely excluded with this amount of oil which would mean 300 ccm. for a man weighing 60 kg.

The author has never observed intestinal adhesions, though observations have been carried on for many weeks after injection of camphorated oil. The sensitiveness of the peritoneum to the oil is very different in different species of animals and even in individuals of the same species. The reaction also varies in strength in different areas of the peritoneum. The rabbit's peritoneum reacts very strongly and uniformly, while in guinea pigs and white mice the reaction is slight and not uniform, and appears to a very different degree in different parts of the peritoneum.
RUNGE.

SURGERY OF THE EXTREMITIES

DISEASES OF THE BONES, JOINTS, MUSCLES, TENDONS. CONDITIONS COMMONLY FOUND IN THE EXTREMITIES

Wilensky, A. O.: Injuries of the Periosteum, with Especial Reference to Their Relations to the Pathology and Repair of Fractures of the Bones. *Am. J. Surg.*, 1914, xxviii, 63.

By Surg., Gynec. & Obst.

Injuries of the periosteum are usually associated with injuries of the neighboring bones or soft parts.

After describing the histology of the periosteum Wilensky classifies injuries of the periosteum under the following heads: (1) Hæmatoma; (2) laceration; (3) injury associated with fracture; and (4) injury associated with dislocation.

The repair of fractures after proper alignment, according to the author, depends very largely on the condition of the periosteum. The form and location of the callus also is determined by the relation of the periosteum to the fragments.
F. J. GAENSLER.

Nové-Josserand, G.: Radiography of the Bones and Joints; Its Value in Orthopedic Surgery (La radiographie des os et des articulations; Sa valeur en chirurgie orthopédique). *Arch. d'elect. med. exp. et clin.*, 1913, 449.

By Journal de Chirurgie.

The splendid advances made in orthopedic surgery in the past 20 years are due, for the most part, to radiology. In his work, which is a general review of the subject presented to the International Congress of Medicine in London in August, 1913, the author considers all the diseases that can properly be called orthopedic, in which deformity is the predominant lesion.

He first discusses deformities of the thorax and spine, which are so intimately connected with one another, and gives the normal radiographical anatomy of the spine. It is to be regretted that he does not insist on pictures taken in profile and that he states, "Views taken in an oblique position or in profile cannot be utilized, except in the cervical region and in very young patients," for it is well known that in the great majority of cases any good radiologist with a powerful machine can take extremely useful profile plates. He also passes over in silence two modern methods of radiodiagnosis which are called into service in orthopedics; first, stereoscopic radiography, which is of considerable importance in the study of malformations of bone in general, and second, telerradiography, which will, without doubt, be of increasing usefulness in this field.

Kyphosis, scoliosis in youth, congenital deformities of the spine, deformities of the thorax and ribs, and symptomatic scolioses include the greater part of the diseases in which collaboration is necessary between the radiologist and orthopedist. Deformities of the upper limb are less important and less frequent but they present some obscure points. Dupuytren-Madelung's deformity, especially, requires further research to clear up its origin. The röntgen rays have perhaps their greatest field of usefulness in affections of the lower limb, especially of the hip. A knowledge of the normal radiological anatomy of the hip is indispensable for the study of congenital dislocation of the hip, as well as for deviations of the neck of the femur. He touches lightly on radiology of the leg and the knee, the

foot furnishing material for a discussion of the difficult subject of club-foot.

An extensive bibliography concludes this interesting and useful work; it is to be regretted that, as is frequently the case, the titles of the works are not given along with the authors and places of publication. This work gives physicians who are not specialists in orthopedics or radiology a good general review of the question.

R. LEDOUX-LEBARD.

Novak, J., and Porges, O.: The Acidity of the Blood in Osteomalacia (Über die Acidität des Blutes bei Osteomalacie). *Wien. klin. Wchnschr.*, 1913, xxvi, 1791.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In 11 cases of osteomalacia: 1 during the puerperium, 3 in advanced age, 1 during pregnancy, and 1 of ostitis deformans in a man, the acidity of the blood was tested by new methods for the sake of testing the acid theory. The 130 examinations showed a decreased carbonic acid content, but even in normal pregnancy there is such a decrease. In osteomalacia as in pregnancy, there must be an increased capacity of the blood for dissolving calcium salts, and an increase of the acidity in the sense that the fixed acids that dissolve calcium salts are increased, and the carbonic acid which precipitates calcium is decreased, so that the blood has a greater capacity for carrying calcium. The administration of alkalies did not have any effect on the osteomalacia, but in one case of osteomalacia at an advanced age all signs of tetany which the patient had had for a year and a half disappeared, which demonstrates the fact that there is a relation between tetany and acidosis. These experiments further confirm the assumption that osteomalacia is dependent on a disturbance of the internal secretion of the ovary, in so far as they show that normal pregnancy and osteomalacia present a similar acidosis. This would seem to indicate that an increase of the changes taking place in the ovary in normal pregnancy is the cause of osteomalacia.

TORGLER.

Axhausen: Bone and Joint Syphilis (Beiträge zur Knochen- und Gelenksyphilis). *Berl. klin. Wchnschr.*, 1913, I, 2361.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Axhausen gives a detailed description of a late form of acquired and congenital syphilis, which he calls diffuse bone syphilis, and especially of a sub-variety which he calls tumor-forming bone syphilis.

Diffuse bone syphilis is manifested by extensive peripheral changes, by thickening and bending of the bones, and the transformation of the smooth surface into a rough one with stalactite-like processes. There is also a fundamental change in the internal structure. The compact tissue is destroyed and replaced by a spongy bone tissue with narrow meshes, resembling pumice stone, which also fills the marrow cavity. This fundamental change in bone structure without softening or suppuration is the

most characteristic sign of diffuse bone syphilis, regardless of whether it affects one or many bones or only a part of a bone.

Röntgen examination shows clearly a uniform, diffuse spongy bone shadow; sometimes there are contained within it remnants of the compact bone which are gradually destroyed and absorbed. He regards this transformation as a reaction of the ossifying bone tissue to the powerful stimulation of the aseptic syphilitic necrosis, which necessarily leads to bone formation and substitution for the dead bone; a process analogous to that observed in transplantation of bone. If, with the characteristic internal changes, there are no changes on the surface, a röntgen picture appears that can hardly be distinguished from that of fibrous ostitis.

The patient's attention is often called to the seat of the lesion by a thickening in the bone or a spontaneous fracture. If the process is limited to a part of a long bone, a hard, spindle-shaped thickening is developed, which increases in size, and justifies the suspicion of sarcoma. Even the surrounding muscle may be involved in the syphilitic process.

The appearance of irregular fever and cachexia makes the differential diagnosis still more difficult. It can be made by means of the Wassermann reaction, the röntgen picture, and the effects of syphilitic treatment. The clinical picture of joint syphilis is extremely varied: in one case it resembles acute or chronic polyarthritis, in another gonorrhoeal joint disease, and not rarely it may be confused with joint tuberculosis. The assumption that syphilis of the joint is chronic and painless must be given up.

The distinction of syphilis from tuberculosis of the joint, especially in childhood, is often very difficult. The decisive point is the Wassermann reaction, which in all of Axhausen's cases was positive.

In syphilis, as in tuberculosis of the joint, a synovial and an osseous form are to be distinguished. It is impossible to make a certain clinical or röntgenological differential diagnosis between the synovial forms of the two diseases, as in both there is chronic effusion and swelling of the capsule with a negative röntgen picture; distinction is easier, however, in the osseous form.

The röntgen picture shows an ill-defined outline of the epiphysis, and sometimes the deposition of layers of bone which gradually encroach upon the surrounding tissues. The normal structure of the epiphysis is hidden by cloudy flecks. When osseous syphilis heals, sometimes foci of thickening can be seen in the epiphyseal ends of the bones. The author regards arthritis deformans as a frequent result of bone syphilis, and thinks bone syphilis an important factor, especially in the production of juvenile arthritis deformans. Antisyphilitic treatment brought favorable, and in one case brilliant results. He used intramuscular injections of bichloride of mercury in young children, and in older children and adults he gave a combined salvarsan and mercury treatment, followed by potassium iodide in rapidly increasing doses. KROH.

Glenn, E. B.: Report of Case of Acute Epiphysitis of Femur Treated First for Rheumatism.*Lancet-Clin.*, 1914, cxi, 171.

By Surg., Gynec. & Obst.

The author reports a case of acute traumatic epiphysitis of the femur in a boy, 11 years of age, the foci of infection arising from a stone-bruise of the foot. The patient had been treated by the family physician for six weeks for rheumatism, after which he was sent to the hospital and a correct diagnosis made. After conservative measures were instituted without success, hip-joint amputation was successfully done.

ARTHUR J. DAVIDSON.

Tyler, A. F.: Cysts of Bone. *Med. Herald*, 1914, xxxiii, 53.

By Surg., Gynec. & Obst.

The author comments on the increasing frequency with which bone cysts are detected since the use of the X-ray and emphasizes that they represent a distinct clinical entity in contrast to the earlier belief according to which they were held to represent degenerative processes of other bone lesions such as sarcomata, chondromata, etc.

A specimen consisting of a portion of the femur resected for pathological fracture is described. This showed several cysts containing a viscid material and lined with a thin shining membrane. The cortical portion of the bone seems to offer no more resistance to the growing cyst than the spongy bone.

In the simple cyst, pain, often intermittent and sometimes associated with impairment of function, is present. Occasionally the first sign of the lesion is enlargement of the bone or spontaneous fracture.

For the simple cysts he advises curretting away the membrane, swabbing with pure carbolic-alcohol, packing with iodoform gauze for forty-eight hours and filling with Moerhof's paste. In the case of multiple cysts it is claimed this treatment will not suffice and resection and bone-grafting is advised. The author reports five cases as follows:

1. Multiple cysts involving the neck of the femur. Resection and bone-grafting from the tibia.
2. Simple cyst of the lower end of the tibia. Treatment as advised above.
3. Fracture of femur occurring just above the site of a cyst. Union and good function without operation.
4. Two other cysts developing in preceding case some time later, one in the femur just below the first and the second in the fibula.
5. Rupture of cyst of tibia with small round-cell infiltration in the lining membrane.

F. G. GAENSLER.

Perrin, M.: Multiple Osteogenic Exostoses Accompanied by Arrested Development and Deformities of the Skeleton (Exostoses ostéogéniques multiples accompagnées d'arrêts de développement et de déformations du squelette). *Rev. d'orthop.*, 1914, v, 51.

By Journal de Chirurgie.

Perrin's memoir is based on three cases in Kirmisson's service, found in three members of the

same family, the father and two children. All three had multiple exostoses and also a malformation of one forearm, the right in the father and daughter, the left in the son. The malformation consisted of shortening and incurvation, with the concavity internally and with an ulnar club-hand, due to arrested development of the ulna and consequent incurvation of the radius; in the girl the inequality in growth of the two bones had brought about luxation of the head of the radius, the most severe degree of the deformity.

Since Bessel-Hagen's important work on the disturbances in growth which accompany multiple exostoses, Perrin has found, besides the cases reported there and these three of Kirmisson's, 33 similar cases.

These disturbances of growth are more frequent than is generally believed, in the course of development of multiple exostoses; they may involve a number of bones or a single bone, the ulna or fibula. There is a general shortening of stature; the arrest of development may involve the two upper or the two lower limbs. The most interesting fact is the inequality in the length of the two bones of the same limb, the forearm, arm, or leg. The fibula may be too short with incurvation of the tibia and talipes valgus. The most frequent and almost characteristic type is arrest of development of the ulna with normal or almost normal growth of the radius. This produces an incurvation of the radius with the convexity external or an ulnar club-hand, the ulna not being involved because it is drawn up from the wrist-joint, or there may be a luxation of the head of the radius that threatens to perforate the skin.

Perrin believes like Lenormant that the disturbance in growth and the multiple exostoses are two different manifestations that are generally associated, but that there is no relation of cause and effect. Both come from defective osteogenesis, especially of the articular cartilage, which radiography shows clearly. There is a hereditary influence in these disturbances in the region of the diaphysis and epiphysis; perhaps it is due to a toxi-infection, such as tuberculosis or syphilis.

ALBERT MOUCHET.

Jones, D. W. C.: A Case of Chronic Joint Lesions in Hæmophilia. *Lancet*, Lond., 1914, clxxxvi, 606.

By Surg., Gynec. & Obst.

Painful swollen joints with effusion are important complications of hæmophilia. The fluid is usually clear and may contain red corpuscles. There are three stages: (1) Hæmarthrosis, effusion of blood into the joint. (2) Inflammation simulating acute tuberculosis. (3) Contraction, scar formation, and ankylosis.

The author reports a case of a man of 32, a bleeder from a hæmophilic family, with multiple joint lesions including a knee which swelled and discolored quickly after slight injuries; his coagulation time was 14 to 60 minutes.

W. A. CLARK.

Amunategui, G.: Primary Sarcoma of Muscles (Sarcomes primitifs des muscles). *Cong. méd. Am. de lang. lat.*, 1913. By *Journal de Chirurgie*.

The author describes three cases of primary sarcoma of the muscles, with their principal characteristics, in children of 11, 5, and 8 years of age. The first two seem to have been caused by traumatism; no cause is given for the third. Extensive resection of the surrounding muscle was performed. There was recurrence in the first two cases; the third had only recently been discharged from the hospital.

The author concludes that sarcoma of the muscles is more frequent than has generally been believed, especially in children. Diagnosis should be made early so that extensive resection can be done and the limb preserved. It is difficult to get the patients to consent to amputation, which should be performed only in case the removal of all the lesions is impossible.

SALVA MERCADÉ.

Weil, S.: Peritendinous Angiomata (Über peritendinöse Angiome). *Beitr. z. klin. Chir.*, 1913, lxxxviii, 56. By *Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.*

The author reports two of his own cases of peritendinous angiomata, to which he adds four from the literature. They develop in the loose cellular tissue around the superficial and deep flexor tendons of the hand, sometimes toward the ulnar side, sometimes toward the radial, eventually involving the tendons of the supinator longus, abductor and extensor pollicis and extensor carpi radialis. Because of their extension distally to the wrist-joint and proximally to the insertion of the muscles of the tendons, the tumors, which are congenital but grow only slowly, have an oval form. Like all angiomata they are generally soft and semi-fluctuating and can be compressed.

In the author's cases the angiomata were hardened in places by thromboses and calcification, which showed in the röntgen picture as round shadows. It is these formations that cause the pain, and not pressure on nerves. As the tumor increases in size there may be slight contractures.

The treatment consists in removing the blackish brown masses — which, as in tuberculosis, are located on the tendons — without injuring them. As the tendon sheaths are not involved it is easy to differentiate them from tubercular tumors. The author believes that their unrestrained growth gives rise to a number of the diffuse angiomata of the extremities.

SIEVERS.

FRACTURES AND DISLOCATIONS

Stoecklin, W.: Fractures of the Head and Neck of the Radius (Die Frakturen des Capitulum und Collum radii). *Beitr. z. klin. Chir.*, 1913, lxxxvii, 641. By *Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.*

Twenty-six cases of these forms of fracture are cited by the author, who divides fractures of the upper end of the radius into incomplete transverse fractures in children and incomplete longitudinal

or oblique fractures, mostly in adults, and complete fractures: (1) Transverse and oblique fractures of the neck of the radius; (2) separation of the epiphysis; (3) chisel fracture; (4) sprain fracture; (5) subperiosteal fracture; and (6) comminuted fracture. Besides other fractures in the region of the elbow-joint which frequently appear as complications, there is quite often an injury to the deep radial nerve.

The etiology is: (1) Direct — fall on the elbow or other direct violence; (2) indirect — it is questionable whether it can be caused by a fall on the pronated hand, with the elbow flexed or extended, or fixed by muscular action.

The clinical signs of fracture of the bone are mostly lacking, only crepitation and limited motion of the head of the radius on turning it can often be demonstrated; therefore, it is necessary to make the diagnosis from the mechanism of the accident, the localization of the effusion of blood, and especially the functional examination. Pronation and especially supination are markedly limited and painful, flexion and extension less so; there is pain on direct pressure and on a blow in the direction of the long axis of the forearm. From an extension of the head of the radius forward and outward a mistaken diagnosis of subluxation is frequently made, which rarely occurs in adults; the extension is caused by a fracture. The decision as to the form of fracture must be made by the röntgen ray, which is especially important for the demonstration of a free body in the joint and to demonstrate complicated fractures.

The treatment should be functional as far as possible; long fixation should never be allowed. Cases in which pieces of bone are completely broken off, where there are free bodies in the joint, or in which the head is dislocated or comminuted, must be operated on. The indications are chiefly determined from the röntgen picture. Even in the operative cases mechanical after-treatment must be begun early. Of the 26 cases, 12 were operated on. In the cases treated conservatively, the results were good with one exception; the cases were for the most part the milder ones. In those severe cases treated by operation, the results were varied; the results were very bad in three cases. Generally there is a limitation of rotation, especially in the direction of supination.

FROMME.

Mencke, J. B.: The Frequency and Significance of Injuries to the Acromion Process. *Ann. Surg.*, Phila., 1914, lix, 233. By *Surg., Gynec. & Obst.*

The author discusses the frequency of acromial injuries and the importance of recognizing the exact nature of the injury. In eight years in the German Hospital there were 89 cases of acromial fractures. These were either: (1) Well marked fractures; (2) a separation at the epiphysis; or (3) sprain fractures—the latter predominating.

Sprain fractures are most often found (1) at or above the acromio-clavicular junction; (2) at the

insertion of the coraco-acromial ligament; or (3) on the upper acromial surface. Some are easily detected with the X-ray, while numerous others are only found after the closest study of several plates.

It has been noted that most of these sprain fractures involve the acromion at its clavicular junction and are often accompanied by a luxation of this articulation.

The author explains that these acromial injuries are caused not by direct violence, but by transmitted force through the greater tuberosity of the humerus, as in falling on the extended arm or elbow.

The two predominating symptoms of these injuries are: (1) Localized tenderness over the acromion, and (2) pain on abduction. The author further states that in stiff, painful shoulders he has never been able to make the diagnosis of sub-acromial bursitis, as is so often done.

He treats every case by three weeks' rest, with early massage and, if necessary, later, by vigorous active and passive motion. PHILLIPS M. CHASE.

Schwarz, E.: Fracture of the Neck of the Femur in Children (Was wird aus der Schenkelhalsfraktur des Kindes). *Beitr. z. klin. Chir.*, 1913, lxxxviii, 125. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Fracture of the neck of the femur is rare in childhood as compared with separation of the epiphysis. It requires a degree of violence almost as great as that required for the same injury in the adult. The symptoms are those of a fracture of the joint. The fracture is intertrochanteric with typical symptoms. It is similar to fracture of the neck in later years in its poor tendency to heal, but is distinguished from it by an earlier return to functional capacity. There is a marked tendency to coxa vara; most cases heal in this position, always with bony ankylosis. As this anomaly of position is hardly noticeable clinically, the prognosis is favorable, but in many cases the neck of the femur disappears or there is severe deformity of the joint. Ideal recovery is rare. KIRSCHNER.

Skinner, E. H.: The Mathematical Calculation of Prognosis in Fractures at the Ankle and Wrist. *Surg., Gynec. & Obst.*, 1914, xviii, 238.

By Surg., Gynec. & Obst.

To facilitate the estimation of prognosis from roentgenograms of fractures, the author believes that less attention is necessary to the anatomical reduction of fragments if the functional joint surfaces and lines of weight-bearing force at the joints be in proper position after reduction.

1. In ankle fractures the functional result of the fracture depends upon the proper reduction of the astragalus so that the line of weight-bearing force which passes through the center of the tibia also passes through the astragalus at its center. This line is plotted upon the antero-posterior roentgenogram of the ankle.

2. In wrist fractures the entire styloid process of the lower end of the radius is constantly distal to a

line which touches the tip of the ulnar styloid, which line is at a right angle to the longitudinal axis of the radius. The functional result of fractures of the lower end of the radius depends upon the reduction of the radial styloid to this position. These lines are to be plotted upon the postero-anterior roentgenograms of the wrist.

The author believes that nature is wonderfully tolerant of fragments if she can maintain her functional joint surfaces.

Weiss: Treatment of Recurrent Dislocation of the Shoulder by the Erlich-Clairmont Method (Traitement des luxations recidivantes de l'épaule par la méthode Clairmont-Erlich). *Rev. med. de l'Est.*, 1913, xlv, 832. By Journal de Chirurgie.

Weiss reports a case, which thus far is unique in France, of the Clairmont-Erlich operation for recurrent dislocation of the shoulder. This operation has only been performed a few times, but it is certainly the one that best fulfills the indications in this condition. The patient was a strong and vigorous man in whom the displacements were produced by attacks of epilepsy; he desired surgical treatment which should protect him from such recurrences. The steps of the operation are as follows:

1. Incision on the anterior surface of the arm, beginning at the coracoid process and following the anterior border of the deltoid; section of the tendon of the pectoralis major; separation of the two portions of the biceps; then section of the tendons of the latissimus dorsi and teres major near the bone. The finger can then be passed around the neck of the humerus, carefully avoiding the artery and circumflex nerve.

2. A second incision is made along the posterior border of the deltoid from the spine of the scapula to the lower insertion of this muscle. After having detached the adjacent parts a muscle flap 2 or 3 cm. broad is made, comprising the posterior edge of the deltoid. The vessels and nerves are spared.

3. The finger introduced into the anterior wound now comes out at the posterior one; a pair of forceps is passed through the opening thus created, the lower end of the muscle flap is seized and brought forward, thus being brought around the neck of the humerus and strengthening the lower part of the joint capsule. The flap is fixed in this position with a few sutures.

Recovery took place in spite of an intercurrent scarlet fever which kept the patient in the hospital for a month. He has since had several attacks of epilepsy, but there has been no recurrence of the dislocation.

The Erlich-Clairmont operation is the operation of choice in recurrent dislocation of the shoulder. The weakest part of the articulation as a result of repeated dislocations is the anterior inferior part; this is materially strengthened by the muscular flap. During contraction of the deltoid the transposed bundle of muscle can easily be felt in this patient.

J. DUMONT.

SURGERY OF THE BONES, JOINTS, ETC.

Sheen, W.: Some Observations on the Operative Treatment of Fracture by Metal Plates and Screws. *Brit. M. J.*, 1914, 411.

By Surg., Gynec. & Obst.

Sheen emphasizes the importance of non-operative treatment of fractures. His observations are based upon 25 cases of operations on the long bones. The late cases, meaning more than two months after the injury, are more difficult to do and more apt to show shock. He lost two cases, from shock, of fractures of the femur in debilitated middle-aged cases. He now operates on femur cases under spinal anesthesia. He advises Lane's technique of not allowing the hands to enter the wound. The periosteum, he thinks, is merely a limiting membrane for the bone, and in one case where he disregarded it there was excessive callous formation. Hereafter, he thinks, it would be better to wrap a piece of fascia lata around the bone to prevent this excessive callous formation.

M. S. HENDERSON.

Phillips, C. E.: Fixation of Fractures by Means of Autogenous Intramedullary Bone-Splints. *Surg., Gynec. & Obst.*, 1914, xviii, 233.

By Surg., Gynec. & Obst.

Fixation of fractures by means of autogenous intramedullary bone-splints is recommended as the operation of election for the following reasons:

1. The use of non-absorbable substances such as bone-plates, ivory pegs, etc., create in the tissues an area of lowered resistance and too frequently result in untoward remote effects, such as chronic osteitis, etc., unless removed by second operation.

2. The use of autogenous bone-splints which become living, integral parts of the bones in which they are inserted is the ideal method of fixation.

3. The only disadvantage of the method has been the difficulty of technique, and this Phillips simplifies by the use of a carpenter's brace and drill bits to prepare the medullary canal for the reception of the splint.

The splint is removed from the crest of the tibia, placed in a small vise, and fashioned by means of a hollow auger such as is used by carriage-makers. This instrument cuts the bone in the form of a tenon of the exact size to fit the holes bored in the medullary canal. A bone tenon one and one-half or two inches long is sufficient to firmly fix a fractured femur or humerus.

The use of these instruments greatly simplifies the technique of bone transplantation and fixation of fractures.

Faveret, P.: Hollowing Out the Tarsal Bones in the Treatment of Congenital Talipes Equinovarus (L'évidement, sa place dans un traitement pratique du pied bot varus équin congénital). *Thèses de doct.*, Par., 1914. By Journal de Chirurgie.

The author discusses the treatment of congenital talipes equinovarus which is reducible manually by the use of an apparatus which holds the foot firmly

in a position of varus and has never produced any accidents due to compression. He believes with Jalaguier and Veau that tenotomy should be done high to be sure of reuniting the two ends of the tendon of Achilles. Jalaguier's method of linear osteotomy may be used or Lamy's apparatus to correct the spiral torsion of the tibia.

Mencièr's method of subcutaneous hollowing out of the bones of the tarsus is an æsthetic operation which leaves no scar and does not deform the foot. It has all the advantages of the other operations on bones and ligaments without their disadvantages. It is very efficacious and may be performed up to the seventh or eighth year. The author claims that the operation is so simple that it can be performed by any practitioner, because of its simplicity and the few instruments required—a Lucas-Championnière's hand perforating screw and curettes—and because it does not risk the life of the patient. The results in the 9 cases given were excellent, but the fact that these patients were treated by a very skilled surgeon and orthopedist should be taken into consideration in evaluating the method.

L. CAPETTE.

McWilliams, C. A.: The Function of the Periosteum in Bone Transplants; Based on Four Human Transplantations without Periosteum, and Some Animal Experiments. *Surg., Gynec. & Obst.*, 1914, xviii, 159. By Surg., Gynec. & Obst.

The author's aim is to attempt to settle the function of the periosteum in transplanting bone, by a number of animal experiments. He cites the views of three leading authorities on the subject, Macewen, Murphy, and Axhausen, all differing. He reports four human transplantations made without periosteum, following Macewen, in each of which bone transplant became ultimately absorbed. One of the patients was regrafted (fibula into tibial defect) with periosteum with perfect result. In the animal experiments, in which bone was transplanted in various ways, practically every graft with periosteum lived and thrived, while but 48 per cent of grafts without periosteum were successful. This shows that there is another element to be considered besides the mere covering with periosteum; this element we infer to be a sufficient blood supply to keep the grafts alive. Had the periosteum been on all the grafts, all would have lived; the conclusion, therefore, must be that the periosteum either favors a good blood supply or else supplies living cells to the graft.

That the periosteum is not unconditionally necessary to the life of every graft is shown by the fact that 48 per cent of grafts without periosteum lived. Since it can never be determined which grafts will live if they be without periosteum, the natural conclusion is that every graft should be transplanted with as much periosteum on it as possible.

From these experiments the author concludes that both Macewen and Murphy are mistaken in their conception of the lack of function of the peri-

osteum in maintaining the life of grafts and that Murphy was misled when he stated that the graft is not osteogenic, but that it is simply osteoconductive of cells into the graft from the contracting extremities of the living stumps—this fact is clearly seen in experiments 3, 4, 17 and 19. If this be a fact the author asks, Why should so many of the grafts without periosteum, in which contact was thoroughly carried out, have died?

McWilliams, conclusions with proofs under each are as follows:

1. If a cavity be made in the shaft of the bone, the periosteum, endosteum, and marrow being thoroughly removed, the cavity fills up with bone from the bottom, which new bone must come from the old bone itself, due to an intact nutrient artery.

2. If a section of the whole diameter of a bone be removed, then the bone will regenerate between the ends of the fragments, if the whole or part of the periosteum be preserved, bridging the defect.

3. Provided the graft be living and taken from the same patient, its future life depends on an efficient blood supply, irrespective of the periosteum or whether it is in contact with living bone or not.

5. A graft on a graft, neither having a covering of periosteum, will not live even though one graft be in contact with living bone.

6. Periosteum alone when transplanted into the soft parts may produce living bone.

7. The splitting of the periosteum of a graft, even though the transplant is entirely surrounded on all sides by periosteum, seems to be unnecessary and accomplishes nothing.

8. Altogether 16 transplantations with periosteum were performed and of these all but one—93 per cent—were successful.

9. Altogether 25 transplantations without periosteum were performed and of these 48 per cent were successful, while 52 per cent were unsuccessful. The influence of the blood supply is demonstrated by the fact that 50 per cent of the transplantations without periosteum made with minute fragments were successful, while but 41 per cent of those without periosteum, made with large single fragments, were successful.

10. From a consideration of all the foregoing facts, the conclusion seems inevitable that bone-grafts of whatever size should be transplanted with as much periosteum covering their surfaces as possible in order that positive assurance may be had of their subsequent living.

Le Jemtel: Intramedullary Graft for Pseudarthrosis of the Diaphysis of the Tibia (Grefte intramédullaire pour pseudarthrose diaphysaire du tibia). *Arch. méd.-chir. de Normandie*, 1913, iv, 200.

By Journal de Chirurgie.

Le Jemtel operated on a woman of 64 who had a fracture of both bones of the leg, that had shown no tendency to unite after four months of treatment. He freshened the fragments, cut a little peg from one of the fragments of bone he had resected, and

pushed it into the marrow of the upper fragment; then by bringing the two fragments as near together as possible he succeeded in making it penetrate the marrow of the lower part of the tibia also, so that the tibia seemed to form one solid bone.

The question arises as to whether this fragment of bone, from which the periosteum had been removed, acted merely as a support, or whether it was a real graft. In either case union took place by first intention and the bone was tolerated in a very satisfactory fashion. Consolidation was, however, slower than in an ordinary fracture, and required nearly three months. At the end of that time the patient could walk, and later reports showed that she was getting along well.

This case is peculiar in that the graft was taken from the fractured bone. The results observed, that is the perfect tolerance of the graft and the absence of any signs of infection, such as there would have been with a sequestrum, leads to the supposition that the graft did not act simply as an inert body.

J. DUMONT.

Herzberg, E.: Mobilization of the Shoulder and Elbow-Joints by the Transplantation of Joint Ends (Über die Mobilisation des Schulter- und Ellbogengelenkes durch Transplantation von Gelenkenden). *Dissertation*, Berlin, 1913.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author discusses the literature of the treatment of ankylosis of the joints and describes 4 cases in which fractures of the elbow from trauma furnished the indication for operation; three of them were children and one a 55-year-old woman.

In the first case, occurring in a 10-year-old child, the joint was laid bare by a Langenbeck's incision and the fracture exposed; the articular surface of the humerus was freed from callus, the humerus resected, the callus joining the fractured end of the joint and the humerus extirpated, and the end of the joint transplanted to the humerus. Fixation at a right angle was followed by good results; there was no flail-joint.

The second case was a 12-year-old child, who had been run over by a wagon. The joint and fracture were laid bare by a Langenbeck's incision; the joint end was free from callus and 2 cm. of the humerus resected, followed by transplantation of a suitable part of the end of the joint. The result here, too, was much better than could have been expected of muscle interposition. There was no flail-joint.

The third case was complete ankylosis in a 9-year-old child, caused by a fall on the elbow. After opening the elbow-joint the fractured piece of the condyle was freed from callus; a hole was made in it with a sharp curette so that it fitted over the point of the humerus; then it was driven over the humerus with a wooden hammer. Both parts of the bone were bored through, catgut sutures passed through the holes and tied. A fixation dressing was applied in the flexed position. The result was good.

The fourth case was also ankylosis of the elbow-

joint in a 55-year-old person. The joint was resected by Langenbeck's method. In some places the ends of the joint had lost their cartilages. The articular surface of the humerus was reimplanted, after the head and the lateral epicondyle had been removed, in order not to leave too great a piece of bone projecting and to make the wounded surfaces of as near the same size as possible. Two parallel canals were bored and by means of silk-sutures the part of the joint was fixed to the shaft of the humerus; the olecranon was sawed obliquely from the ulna, the fixation being at a right angle. The result was: Moderate lateral flail-joint and functionally poor result on account of the atrophy.

In conclusion, three operations on the shoulder-joint by Klapp's method are described. Klapp's operative mobilization of the joint by the transplantation of the ends of joints may be reckoned as a partial resection, thus widening the field of the latter.

Fritz LOEB.

Lewis, D. D., and Davis, C. B.: Repair of Tendons by Fascial Transplantation. *J. Am. M. Ass.*, 1914, lxii, 602.

By Surg., Gynec. & Obst.

The free transplantation of tendons to repair defects in other tendons resulting from trauma or infection has become a well recognized surgical procedure.

For this free transplantation, the tendon of the palmaris longus has been used in most cases because it can be removed without interfering with the wrist function. If, however, this tendon does not supply enough material, another source of supply must be looked for.

Experimentally, it has been demonstrated that fascia behaves much like tendon when transplanted, and that long defects in tendons may be bridged by tubes of fascia, and that tendon which cannot be differentiated from the tendon which has been destroyed develops to repair the defect.

Kornew believes that when a fascial tube is inserted between the cut ends of tendons, the fascia proliferates to form the tendon and very little of the new tendon is formed by proliferation from the ends of the divided one. The authors of this article believe that the fascial tube plays a passive rôle in the development of the new tendon.

The authors report a case in which a strip of fascia three and one-half inches long and one-half inch wide was used to repair the flexor tendons of the right ring finger. Within six weeks a definite rounded band, which rolled under the skin, could be felt.

For cosmetic reasons the finger was amputated 225 days after the fascial tube was inserted. The rounded band that could be felt was a well formed tendon differing from a normal tendon in lack of luster only. When this tendon was divided transversely, the original fascial tube could be seen. It contained tendinous tissue and there was no histological evidence that this tissue developed from the fascial transplant.

R. O. RITTER.

Stoffel, A.: New Points in Tendon Transplantation (Neue Gesichtspunkte auf dem Gebiete der Sehnen-überpflanzung). *Verhandl. d. deutsch. orthop. Gesellschaft.*, 1913, 250.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Stoffel believes that tendon transplantation is performed many times in an unphysiological way, because muscles are used whose anatomical structure is entirely different from that of the paralyzed muscle. Only muscles should be used that have morphologically the same functions as the ones for which they are substituted. The extensor hallucis, the extensor longus digitorum, and the peroneus longus are suitable as substitutes for the tibialis anticus.

A muscle should not be carried through the interosseous space, because in this way an extensor may be substituted for a flexor and *vice versa*. Neither should a muscle of the flexor group be carried around the tibia or the fibula anteriorly, because it may be loosened too much from its origin. He says that the transplanted muscle must not be put on tension, but that its physiological length must be preserved. It must not be inserted far enough from its point of origin so that it is stretched.

Transplantation in paralysis of the foot must consist of two steps: (1) The right form of the foot must be obtained by a plastic operation—transformation of the tendon of the paralyzed muscle into a ligament; (2) the substitution of another muscle for the paralyzed one, observing the principles given above.

The treatment of an over-stretched muscle should not consist in shortening the tendon, for this only stretches the belly of the muscle that much more. Stoffel procures contraction of the muscle by strong electric stimulation through the wound, supplemented by continued electric treatment after the operation.

In conclusion, Stoffel recommends electrical examination of the muscle during the operation to determine whether it is adapted for transplantation. The color of the muscle is not always an index of its strength.

PELTESOHN.

ORTHOPEDICS IN GENERAL

Meisenbach, R. O.: Some Orthopedic Conditions in the Neighborhood of the Shoulder-Joint. *Buffalo M. J.*, 1914, lxix, 410.

By Surg., Gynec. & Obst.

Meisenbach's article deals with the following disturbances of the shoulder-joint: (1) Injury to the subdeltoid bursa; (2) rupture of the supraspinatus muscle; (3) brachial pressure with neuritis as a symptom; (4) referred pain to the neighborhood of the shoulder due to slightly deformed scapula.

He points out that the subdeltoid bursa is often injured when there is fracture or dislocation at the shoulder-joint and frequently gives pain long after the major injury has been adjusted, especially in those with a predisposing diathesis. The arm

usually can be raised, but the movement is painful. Pressure over the bursa when the arm is hanging is painful, but this tenderness disappears with pressure at the same point when the arm is raised so the bursa is protected by the acromion process.

A 40-year-old patient, when seen several months after an injury to the shoulder, had a swelling of the left arm suggesting fluctuation in the region of the deltoid bursa. A few months after manipulation the patient returned to work.

Rupture of the supraspinatus muscle usually follows indirect muscular action, is often associated with a bursitis, and prevents the arm being raised above the level of the shoulder. In a case of injury with Dawborn's sign, the patient was unable to raise the arm above the level of the shoulder, the right shoulder drooped forward and downward, and there was atrophy about the right clavicle. The diagnosis was rupture of the supraspinatus muscle with a probable subdeltoid bursitis.

Brachial pressure with neuritis as a symptom occurs in some individuals, usually with a tendency toward forward-stooping shoulders and pressure upon the brachial plexus.

The author reports a case with pain radiating down the arm, chiefly in the hand; contour of shoulders equal; no special tenderness over the bursa; active motions somewhat painful in certain directions; slightly stooped shoulder; arms forward. When the stooped shoulders were corrected and the weight taken off the brachial plexus, the diagnosis was confirmed by the patient's improved condition.

The author believes that a sharp-pointed scapula, which will not glide easily, may be caused by stoop shoulder attitudes in children and that in occupation there may be an irritation referred to the shoulder or to the chest. He reports two cases, one a lady 28 years old, with pain in both hands and general fatigue. There were stoop shoulders, forward bending, tense neck muscles, angles of the scapula forward and deep seated. Recovery followed the removal of the sharp angles of the scapula. The other case, a man with referred pain to forward part of the right chest and crepitation over the shoulder blade, recovered after the angle of the scapula was removed.

In the differential diagnosis attention is called to Dawborn's sign, possible fluctuation, ability of the patient with pain to slightly move the arm in all directions when there is a subdeltoid bursitis. In rupture of the supraspinatus there is usually atrophy of the deltoid, pain not great unless bursa is pinched, arm cannot voluntarily be raised above the level of the shoulder. HENRY BASCOM THOMAS.

Marquis: Little's Disease Treated by Van Gehuchten's Operation (Maladie de Little traitée par l'opération de Van Gehuchten). *Bull. et mèm. Soc. de Chir. de Par.*, 1913, xxxix, 1461.

By Journal de Chirurgie.

A boy of 7 with Little's disease had never been able to walk, stand upright, or seat himself. After

complete failure of orthopedic treatment, consisting of section of the tendon of Achilles and the semitendinosus on both sides and fixation in a plaster cast with the thighs abducted, the legs extended and the feet flexed, Marquis decided to perform Van Gehuchten's operation of sectioning the nerve roots. On the left side he resected in the terminal cone of the spine three bundles, each including three or four posterior root fibers, leaving three or four fibers intact between each two bundles. The same operation was performed on the right except that fewer fibers were resected and that the bundles left intact were larger than those resected. The recovery was uneventful, and eight days after the operation massage and mobilization was commenced. Four months after the operation the functional result, though different on the two sides, is considerable. The child can seat himself with the legs horizontal; he can stand upright with one hand resting on some support, and he can walk with the aid of a cane.

CUNÉO, who reports the case, thinks that Marquis resorted to root section too soon, before having given orthopedic treatment a thorough trial. This case, therefore, cannot serve as a basis for a discussion of the indications for orthopedic treatment and the various root section operations—Förster's, Guleke's, Schuller's, Van Gehuchten's and Sicard and Desmarest's. It is difficult to determine the value of these operations until they have become common enough so that many surgeons perform them and the mortality does not depend on the skill of a certain specialist. The mortality thus far has been 6 in 88 cases, without counting the failures that have not been published.

The principle of Van Gehuchten's operation in contrast with Förster's is to resect, not the great nerve trunks of the posterior roots, but only a few posterior root fibers. Cunéo finds that this method has two advantages: first, that the decrease in the nerve tonus is more uniformly distributed over all the motor cells of the anterior horn, and consequently decreases the tone of all the muscles; the second is that the technique is simpler because of the concentration of all the root fibers in a very limited space, and as it is not necessary to know before sectioning them to what root they belong, the resection of the laminæ of the vertebræ can be much less extensive in height as well as breadth, so that there is less danger of shock, and especially of hæmorrhage; in fact, thus far there has been no mortality from Van Gehuchten's operation, although it is true that it has only been performed about ten times. As to the results obtained, especially in Little's disease, they compare favorably with those from Förster's operation.

KIRMISSON and BROCA agree with Cunéo in doubting the justification for root section in Marquis' case; and they believe that orthopedic treatment—tenotomy, osteotomy and motor education—judiciously applied and kept up perseveringly will give as satisfactory results as operation on the spinal roots.

DELBET also agrees in this belief, but calls attention to another advantage of Van Gehuchten's operation over Förster's; viz., that as the laminectomy is farther up, the wound does not run the same risk of becoming infected.

MAUCLAIRE calls attention to the operation recently recommended by Stoffel for Little's disease, which consists in sectioning parts of the nerves supplying the muscles that are the most contracted. In one case he successfully sectioned half of the internal popliteal nerve, but the operation is too recent to have judgment passed on it.

In several cases of Stoffel's operation the results have been encouraging: Putti 4 cases, Anzilotti 1 case, Hoffmann 8 cases. To avoid total paralysis, care must be taken not to cut more than half-way through the nerve, and to separate the two ends of the nerves to prevent regeneration. J. DUMONT.

Basseta: Schlatter's Disease (La maladie de Schlatter). *Arch. di ortop.*, 1913, xxx, 305.

By Journal de Chirurgie.

The author reports a case of this disease, the nature of which is still undetermined. It is localized at the anterior tuberosity of the tibia and was described in 1903 by Osgood of Boston and Schlatter of Berlin.

The author's patient was 13 years old and fell while kicking a football; after a few moments of friction he was able to renew the game and did not come to the clinic until a month and a half after the accident. The left leg did not show a vicious position; there was simply muscular atrophy of the thigh; the femoral part of the knee was normal, but there was thickening of the patellar ligament and the anterior tuberosity of the tibia was prominent, especially the external part of it. Palpation showed a little fluid in the joint, and there was keen pain on pressure at the tuberosity; no abnormal mobility. The movements of the knee were normal, except extension, which was incomplete.

The patient was placed at rest and treated by massage, and a year later was completely well. In 1913 he complained of similar pains in the tuberosity of the right tibia, which had increased to twice the size of the left one, which had been attacked first. The signs were the same as those observed before on the left and he was cured by rest and massage.

This case is followed by a complete history of Schlatter's disease and the author gives the following conclusions: In addition to fracture of the tuberosity of the tibia there is an affection called Schlatter's disease. Clinical examination does not show it to be either traumatic or inflammatory in nature; a study of the etiology gives no reason to assume a fracture and radiographical examination is not conclusive. Local examination, the course of the malady, open operation, and radiography lead to the conclusion that there is repeated local irritation caused by traction of the patellar tendon, followed by exaggerated ossification. P. GRISEL.

Leo, W.: Heine-Medin's Disease and Its Relation to Surgery (Die Heine-Medinsche Krankheit in ihren Beziehungen zur Chirurgie). *Klin. f. psych. u. nerv. Krankh.*, 1913, viii, 29.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Heine recognized the great importance of surgical treatment in infantile paralysis. Its object is to overcome deformity and restore function. Replacement, tenotomy, and plastic lengthening of the tendons are made use of to overcome contracture. The operations made use of for the restoration of function are arthrodesis, transplantation of tendons and muscles, and splicing of nerves.

Arthrodesis is indicated in extensive and definite conditions of paralysis. Tendon transplantation should be performed not less than a year after the acute stage. The social condition of the patient must be taken into consideration because of the long after-treatment necessary.

If these two methods cannot be used muscles may be transplanted, but this is a rare operation. Nerve-splicing has thus far not yielded very positive results.

The author describes König and Hildebrandt's method in paralytic club-foot and paralysis of the quadriceps and deltoid. Severe talipes equinus is corrected by arthrodesis. Mild cases of club-foot are treated by tenotomy of the tendon of Achilles, correction of the position, and a plaster cast. If both groups of muscles are paralyzed arthrodesis is performed; if only one, the plantar or dorsal flexors, the tendons are transplanted.

In paralysis of the quadriceps if the flexors are paralyzed arthrodesis is indicated; if they are normal, tendon transplantation. In paralysis of the deltoid Hildebrandt's transplantation of the pectoralis major and trapezius muscles is used, or Vulpius' arthrodesis. BAKAY.

Lowman, C. L.: Relation of Foot and Leg Muscles to the Statics of the Body. *Boston M. & S. J.*, 1914, clxx, 191.

By Surg., Gynec. & Obst.

The author briefly and concisely presents "the relation of foot and leg muscles to the statics of middle segment, the pelvis, and lower back regions." He describes various pathological changes and suggests suitable treatment.

It has frequently come to his notice that with malposture of feet, limbs, and back, tenderness and pain was noted in the region of the hip-joint near the trochanter major posteriorly and at the insertion of the Y-ligament anteriorly and the radiograph often shows a lippling or even spur formation due to irritation caused by increased tension of the muscle and ligaments attached. He also noted in back strain with tension upon the iliolumbar ligament that the crest of the ilium was thickened with a lippling of the vertebra, and sometimes calcification of the ligament. Also in weak, round, or flat back, with increased tension on the psoas and pyriformis muscles, irritation was found at their origin and insertions.

Weak sacro-iliac joints, tilted pelvis due to short

leg, or unilateral flat-foot may cause much the same process by over-strain upon the muscles.

Relief may be obtained by the adjusting of apparatus, as plates, shoes, etc., to force the os calcis outward, and place weight on the outer border of the

foot, so as to rotate the thigh and rest the irritated muscles.

Rest and corrective exercises should be used also in connection with corrective apparatus, especially in young adults and children. C. C. CHATTERTON.

SURGERY OF THE SPINAL COLUMN AND CORD

Meisenbach, R. O.: The Correction of the Fixed Structural Type of the Spinal Lateral Curvature. *J. Am. M. Ass.*, 1914, lxii, 517.

By Surg., Gynec. & Obst.

The author advocates the Abbott method of treatment for spinal lateral curvature. He believes that:

1. The chief causative factors of scoliosis are muscular weakening, together with the anatomical construction of the torso. A lateral curve may be considered as a sequence rather than as a primary entity. It may be induced in many ways: through disease, posture, congenital defects, or variation of the bony skeleton.

2. There are practically two types of back, the flat and the lordotic. Each of these, occurring in children, must, according to Wolff's law, affect the anatomy of the torso.

3. The spinal action is closely allied to the anatomical construction, as is shown by the articular processes of the twelfth dorsal, the dorsal, and the lumbar vertebrae.

4. Experiments on the cadaver, both with and without the röntgen ray, show that hyperextension locks and flexion unlocks the spine; that in hyperextension the lumbar spine is completely locked, whereas the dorsal is only partially locked and admits some rotation. In forward flexion and side bending the spine is in the best position for correction and for the rotating of a lateral curve.

5. There are three types of scoliosis; the congenital, postural, and structural. The structural is the most difficult to treat, as it involves the consideration not only of the spine, but also of the viscera of the torso, and the general condition of the patient. In the fixed structural type the ribs and vertebrae have become deformed, the ligaments have contracted, and the viscera are displaced. The postural type is a forerunner of the organic, and if left alone will cause bony changes and therefore should receive attention early.

6. In considering any case for treatment, complete records of the case should be made by means of special apparatus — the scolimeter. The anatomy of the patient should be studied by means of röntgenograms and his body thoroughly examined by the internist or the family physician. If this is done, the risk to the patient will be minimized, even in the severer types. The displacement of the heart, with heart-murmurs, together with symptoms of anæmia or gastric disturbance, are not necessarily contra-indications for treatment, but it often hap-

pens that these conditions and symptoms improve after the spinal correction has been undertaken. In some cases the percentage of hæmoglobin is increased after correction. It is common to find sub-oxygenation resulting from deformity in patients afflicted with scoliosis and lack of excursion of the ribs. The excursion of the ribs can best be improved by the correction of the spinal deformity.

7. Since it has been proved that the spine can actually be rerotated and the deformed ribs remodeled, as it were, many of the cases which were formerly considered hopeless may now be much improved and straightened.

8. Persons with extreme scoliosis may be very much improved in regard both to the general health and to the deformity, and, therefore, should receive careful consideration. The mild types, and even those which formerly were considered beyond help may now be anatomically corrected when skillfully treated.

9. The new method of treatment is comparatively rapid, and in some instances surprisingly so, when compared to the old methods, the pain not necessarily being in proportion to the deformity. The absence of pain, however, in the process of correction, depends much on the technique.

10. It is the duty of every practicing physician to look carefully over any doubtful cases which may suggest flat-foot or any irregularity in posture, because these deviations from the normal may be forerunners of lateral curvature and, later on, severe deformities of the spine.

CHARLES M. JACOBS.

Jansen, M.: Physiological Scoliosis and Its Causes

(Die physiologische Skoliose und ihre Ursache).

Ztschr. f. orthop. Chir., 1913, xxxiii, 1.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

In this important work Jansen revives the clinical picture of physiological scoliosis, which has been disputed for a quarter of a century, and gives anatomical and developmental facts to show its origin.

1. The spinal column of normal men frequently shows marked lateral deviations at three places: at the twelfth, seventh and second dorsal vertebrae. They are (a) a lumbodorsal convexity to the left, (b) a middorsal convexity to the right, and (c) a cervicodorsal convexity to the left. There is a remarkable agreement between these typically located bends and the deviations in Schultheiss' scoliosis statistics. The normal and abnormal spinal column must yield to the same physiological

forces. The author gives a detailed historical presentation of the knowledge of physiological scoliosis with a critical discussion of the different theories: the aortic theory, the theory of right-handedness, that of unequal growth of the ribs, etc. Clinically there are four different forms of physiological scoliosis, represented by different combinations of the three deviations, viz., a , $a+b$, $a+b+c$, $a+c$. Besides the constant localization of these deviations, physiological scoliosis is characterized by a number of accessory deviations.

2. Heretofore there has been no exact knowledge of the course of the internal pillar of the diaphragm. Jansen demonstrates the surprising fact that, contrary to all other muscles, it is attached asymmetrically to the spinal column, and shows a more or less decided tendency to run to the left, upward and forward, to be inserted into the central tendon. This explains the tendency of the lumbodorsal junction to be drawn toward the left and the more pronounced drawing in of the left inframammillary region. The asymmetrical course of the internal pillar of the diaphragm is a compensation for the greater longitudinal tension prevailing in the left lung, which was demonstrated by the author's earlier research. Like a two-headed muscle the left lung tends to pull the middle dorsal segment out more than the right and it also affects the cervical segment. The two upper curves, b and c , are thus the result of different lung tension, and so likewise to be attributed to the greater strength of the left half of the diaphragm. He gives a free discussion of the four clinical forms of physiological scoliosis, for which he proposes the names, simple for a , double for $a+b$, and triple or respiration scoliosis for $a+b+c$. The fourth form, $a+c$, is a left convex total scoliosis. Jansen corroborates the three cardinal symptoms. The ultimate cause of asymmetry of the diaphragm and physiological scoliosis is the upright position of man, which points the way to prophylactic treatment. DUNCKER.

Calot: Treatment of Scoliosis by Abbott's Method
(Le traitement de la scoliose par la méthode d'Abbott). *Cong. de l'Ass. franc. de Chir.*, 1913.
By Journal de Chirurgie.

Calot says that, thanks to Abbott's method, scoliosis is no longer incurable; all cases except those of the fourth degree can be cured. The kind of scoliosis is no contra-indication, nor is age, for patients 40 years of age have been cured, and even in extreme cases marked improvement can be obtained. These extreme cases ought not to be met with in the future, for they can be cured before they reach such a stage. For high scolioses, which are beyond Abbott's method, Calot describes his own method and his plaster corset. For scolioses of the first and the beginning of the second degrees he shows that a removable celluloid corset is preferable to Abbott's non-removable plaster one, as it produces pressure on the deviated part of the spine and gentle and progressive correction of the scoliosis.

MENCIÈRE described his technique. He believes in Abbott's principle of keeping the spine in flexion to correct the position of the vertebrae, but he believes the patient's respirations should be made use of for correcting the thorax. He therefore presented his apparatus for pneumatic pressure for applying respiratory gymnastics. Instead of having the patient, as Abbott does, in the dorsal position in a hammock, he has him seated with the trunk bent forward, the abdomen resting on a strap and the forearms on a desk, reversing the vicious attitude of the scholar, seated with his elbows on a desk, which tends to produce scoliosis. He criticised the method of studying scoliosis by means of radiographs and photographs, which often give deceptive results, and showed a series of casts of more than 30 patients, the casts being cut to show the different stages in treatment. The method is active, for it forces the atrophied parts to dilate, and restores the thoracic segments to a normal position: it benefits the respiratory system considerably, as is shown by the spirometric observations made on all the patients and their generally improved condition. Although the method cannot be applied indiscriminately to all cases, it seems to answer almost all requirements.

LANCE has been using Abbott's method for 14 months, and thinks that with a few exceptions, due to economic conditions or painful scolioses, it should be reserved for fixed scolioses. He has found it most successful between the ages of 14 and 18 but less successful in adults and impossible in the small child. There are some contra-indications due to local conditions, rickets, other deviations, extreme grade of the scoliosis, and some due to a general condition, such as pulmonary tuberculosis. Cases of recent cardiac insufficiency in connection with scoliosis can be relieved. Results can be shown by a series of casts and radiographs, but photographs are of no value. Abbott's method has a definite effect on the rotation of the ribs and vertebrae; it brings about improvement and often complete cure of the gibbosity; the lateral deviation is completely corrected only in cases where there is little or no bony deformity. When the vertebrae are very much deformed he has obtained only partial correction, but this correction could be maintained by wearing a celluloid corset for a long time.

On the whole the results of the method are excellent and by its use the correction of the majority of severe scolioses is assured. J. DUMONT.

Oppenheim, H.: Diagnosis and Differential Diagnosis of Tumors of the Spine (Weitere Beiträge zur Diagnose und Differential-diagnose des Tumor medullæ spinalis). *Monatschr. f. Psychiat. u. Neurol.*, 1913, xxiii, 451.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author considers in detail in the first chapter the symptomatology of an inflammatory process of the lower segment of the spinal cord simulating tumor. The patient was a 51-year-old man who

for several months had had symptoms of a progressive tumor of the conus of the cord. As all therapeutic measures were unavailing, operation was finally undertaken, but the patient died of exhaustion. Histological examination showed an inflammatory process, a meningomyelitis in the region of the conus, epiconus, and lower lumbar cord.

A case of successful operation for a tumor of the middle and upper part of the cervical cord was described. For a year a 12-year-old boy had shown a gradually increasing paresis beginning in the right arm, accompanied by Brown-Sequard's syndrome, an involvement of the right facial also being noted. Operation showed a fibrosarcoma at the level of the third, fourth, and fifth cervical vertebrae. Recovery was complete after removal of the tumor.

Data is given, based on a great number of the author's cases, for the diagnosis and differential diagnosis of spinal hemiplegia, of which an inferior, a median, and a superior type is distinguished, according to the height of the lesion.

In the inferior type there is atrophic paralysis of the small muscles of the hand, and generally also of the triceps; the triceps reflex being absent, while the supinator reflex and that of the flexors of the forearm and the pronators is generally preserved, and may even be exaggerated. There are pupillary symptoms and spastic paralysis of the leg on the same side; there is anæsthesia on the opposite side in the leg and body and on the same side in the lower part of the arm supplied by the spinal roots.

In the superior type the atrophic paralysis affects the Erb's muscles, but the flexor reflex of the forearm is lacking; instead of this, on striking, the styloid process of the radius flexion of the fingers takes place; the triceps reflex is generally exaggerated; the paresis of the muscles supplied by the lower cervical enlargement may be spastic in character.

The median type is hardly ever observed in a pure form, but mixed cases are not unusual.

Spinal hemiplegia caused by diseased foci above the cervical enlargement has a peculiar character. The most important point is the motor irritation reflex: Hypertonicity and increase of all tendon reflexes in the arm; sometimes there is also "rotation" and hand clonus. In some cases there has been a simultaneous paralysis of the diaphragm. In the regions supplied by the roots arising above the diseased focus there may be irritative phenomena in the form of hyperæsthesia and contractures of individual muscles. This probably also causes the hiccough that is sometimes observed. Through involvement of the spinal roots of the trifacial there may be irritative symptoms in the region of the fifth nerve, such as hyperæsthesia and dissociated sensory paralysis in the face. There is an interesting question in regard to the appearance of bulbar symptoms: Intoxication and diaschisis (Monakow) have been held responsible for them, while Oppenheim points out that stasis of the cerebrospinal fluid above the diseased point may play an important part in causing them. TEICHMANN.

Mayer, L. Enchondroma of the First Cervical Vertebra; Compression of the Cord; Laminectomy; Recovery (Enchondrome des premières vertèbres cervicales; compression médullaire; laminectomie décompressive; guérison). *J. de Méd. de Bruxelles*, 1914, xix, 1. By *Journal de Chirurgie*.

A young man of 19 had had an anthracoid furuncle of the nape of the neck, six years before, and a hard swelling of the region persisted after it. It was painless but continued to increase in size slowly, and in 1912 it was incised by physicians who believed it to be a lipoma or an abscess; when it was found to be a bony tumor the wound was closed.

About a year later the patient was examined by Mayer, who found a hard tumor in the occipital region, slightly painful on pressure, not adherent to the skin, immovable on the vertebral column. Radiography showed a bony tumor with a broad base implanted on the spinous processes of the axis and the third cervical vertebra; there was hardly any spontaneous pain, except a sharp pain occasionally in the neck and some tingling in the right arm; movements of the head were possible, but were a little disturbed by the size of the tumor. The tumor was removed quite easily with the gouge and saw, passing along the laminae of the second and third cervical vertebrae. Histological examination showed it to be a benign osteochondrofibroma.

The patient recovered quickly and remained quite well for four months; then he began to feel fatigued, he had some difficulty in deglutition and a progressive paralysis with amyotrophy, beginning in the right shoulder and arm and extending rapidly to all four limbs and to the muscles of the trunk. He grew thin. A tumor was found at the nape of the neck the size of an egg, not very hard, painless, adherent to the deep tissues, situated at the right of the vertebral column. The cutaneous reflexes were abolished in the lower limb, the tendon reflexes exaggerated. Pain and temperature sensation were almost abolished. There was no ankle clonus, no Babinski, no Romberg, and no disturbance of the sphincters. Lumbar puncture showed a normal cerebrospinal fluid, Wassermann reaction was negative in the blood and cerebrospinal fluid.

Mayer made a long incision from the occipital protuberance to the spinous process of the sixth cervical vertebra; the recurrent cartilaginous portion of the tumor was detached from the muscles of the nape of the neck and resected; then the vertebral column was opened by resection of the spinous process of the third cervical vertebra. The tumor had proliferated into the interior of the vertebral canal and had caused an incomplete luxation of the axis on the third cervical vertebra; the resection was easily extended to the spinous processes and right laminae of the axis and atlas, so as to denude the cord through an extent of 6 cm. without involving the meninges and extending only to the vertebral foramen. Hæmorrhage was relatively slight. The wound was closed and a plaster cast applied which was replaced after three weeks by a lighter celluloid

apparatus. The day after the operation the left hand could be moved somewhat; two weeks later walking was almost normal, and the disturbances of deglutition, sensation, and the reflexes had disappeared.

PAUL MATHIEU.

Leszynsky, W. M.: Glioma of the Cauda Equina.

N. Y. M. J., 1914, xcix, 360.

By Surg., Gynec. & Obst.

The author reports the case of a woman aged forty-nine years, who twelve years ago slipped and fell, striking herself violently on the buttocks, but was apparently uninjured. She remained well until three years later, when she began to have pain in the left lumbar region, radiating in the course of the left sciatic nerve and extending to the knee. At times, the pain also occurred either in the anterior portion of the left thigh or in the left calf. The pain was paroxysmal, and usually of a sharp or darting character, lasting for several hours. There were periods of several months in which she was entirely free from pain. At times, the pain was so severe that she was unable to lie abed. About four years after the left lower extremity was attacked, the right side became similarly affected. During the last three years, there had been numbness in both feet and toes and the legs would often give way in walking. At this time, the knee jerks were absent, and there was loss of sensibility extending from the toes to the knees. At the time of examination the patient was unable to walk or stand. Three weeks before, she noticed occasional incontinence of urine and frequent attacks of involuntary flexion of the left lower extremity at the knee and hip joints. She had recently had several attacks of occipital headache; no tinnitus, vertigo, nor vomiting. The menopause had occurred the previous February. She was always of a nervous temperament.

While in recumbency, she was unable to elevate either leg or move the feet and toes. The crural group and the iliopectors were paretic on both sides. When either thigh was passively elevated and supported, she was able to extend the leg several times, but the muscles became rapidly exhausted and she was then unable to accomplish the slightest movement. There was bilateral foot-drop with contracted tendo achillis on the right side and a trophic ulcer was forming over the heel. The knee jerks, Achilles and plantar reflexes were absent.

There was an old scoliosis with the convexity in the lower thoracic region; tenderness on pressure over the right side of the first lumbar vertebra. There was complete analgesia and thermo-anæsthesia, and loss of the sense of position on both sides extending upward to one inch above the patella. On the right side anteriorly, hypalgesia extended to one inch above the level of the umbilicus, while on the left side it reached to three inches below the nipple. Posteriorly, it extended to the level of the eleventh thoracic spine. Tactile sensibility was preserved.

The faradic irritability was normal in all nerves and muscles in both lower extremities. The upper extremities, face, tongue, cranial nerves, pupils, and optic discs were normal. There was no evidence of disease of the thoracic or abdominal viscera. Radiographs of the vertebral column showed normal conformation, and there were no indications of exostoses. The Wassermann serum reaction, the blood count, and urine examination were negative in result. No cerebrospinal fluid could be obtained.

At operation the tumor was encapsulated, and the roots of the cauda were spread over its dorsal surface. It extended above the level of the tip of the conus, and the entire spinal canal was filled by the tumor mass. The growth was left for extrusion. One week later the tumor was removed and the patient improved slightly, but died from exhaustion 3 months later.

The pathological report is as follows: At the level of the conus, the dural sheath was filled with tumor mass, to which it was intimately adherent. This mass was of a fibrohyaline structure, pushing some of the nerve bundles of the cauda equina against the dural sheath, and enclosing others within its substance. In the middle portion of this mass, there was a longitudinal cavity about one and a half inches long. At the level of the first sacral segment it was less hyaline, but somewhat granular, and, in the lower part of the sacral portion, the dural sheath enclosed a tumor mass the size of a pigeon's egg, which on section was mottled grayish red, and coarsely granular. It was loosely adherent to the surrounding dura, and the nerve bundles were disposed peripherally to it. On transverse section made at different levels of the lumbar enlargement, the central portion was found to be hollowed out by irregular longitudinal cavities. The tumor was a glioma.

EDWARD L. CORNELL.

SURGERY OF THE NERVOUS SYSTEM

Rochet and Latarjet: Surgical Methods of Approach to the Hypogastric Plexus and Its Ganglion (*Étude sur les voies d'abord chirurgicales du plexus hypogastrique et de son ganglion*). *Lyon chir.*, 1913, x, 425.

By Journal de Chirurgie.

Rochet and Latarjet believe that the section of the hypogastric ganglion is indicated in some

diseases of the bladder. It must be approached either by extra- or intraperitoneal laparotomy. In the first case after the rectus muscles have been separated the bladder is dissected first anteriorly and then posteriorly. It is then drawn forward toward the pubis so that the dissection can be carried down to its lower part, and the seminal ves-

icles, the vas deferens, and the ureters explored. The ganglion was found a little inside the last 2 cm. of the latter and about a finger's breadth below them.

When the intraperitoneal route is chosen, the ureters are found, preferably far back at the point of crossing with the iliac vessels, through a little opening made in the peritoneum; then prolonging the incision, the ureter is followed down to the bladder, and down deep behind it between the rectum and the base of the bladder the ganglion is found with numerous fibers given off from the lower border. The external face of the ganglion is denuded and it is sectioned between two forceps; at this depth all operative procedures are delicate. The sectioning of the ganglion causes an immediate and total paralysis of the bladder; the dogs operated on

by Rochet and Latarjet showed enormous distention and incontinence resulting from it.

The operation may be indicated in man in some cases of stubborn and very painful cystalgia with tenesmus, as is seen in old painful cases of cystitis and especially in tuberculosis of the bladder; chronic retention without pain and with regular catheterization would certainly be preferable for these patients. Rochet and Latarjet tried this procedure on a patient with inoperable tuberculosis of the kidney and bladder; the result was good and the patient was relieved from pain until his death, a month later. As the bladder had been opened and remained fistulous, it could not be determined whether the favorable result was due to the section of the ganglion or to this involuntary cystostomy. CH. LENORMANT.

DISEASES AND SURGERY OF THE SKIN, FASCIA, APPENDAGES

Coerr, D. H.: Bismuth Paste as a Primary Dressing for Skin Grafts, and in the Treatment of Burns and Granulating Wounds. *Am. J. Surg.*, 1914, xxviii, 71.
By Surg., Gynec. & Obst.

Coerr reviews the various dressings for skin-grafts, with comments on their disadvantages. The author's method consists of impregnating or buttering strips of sterile gauze, six or eight layers in thickness, with sterile 33⅓ per cent Beck's bismuth paste. These strips are laid directly over the newly implanted grafts, extending for two or more inches beyond the area of the wound — no folds or wrinkles being permitted to remain. Over these is placed a layer of absorbent cotton and the dressing held in place by roller bandage. The first dressing should be done on the fifth day, and especial care should be exercised in the removal of the primary dressing; subsequent dressings are done every third or fourth day. These dressings leave a healthy graft. As they are held firmly in place, exudation becomes almost negligible and there is excellent proliferation of the epithelium. The dressing is very comfortable, and the resultant scar is soft and pliable. Coerr also uses this paste as a primary dressing in burns. HENRY J. VAN DEN BERG.

Smith, O. C.: Hygroma Cysticum Colli and Hygroma Axillare. *J. Am. M. Ass.*, 1914, lxii, 522.
By Surg., Gynec. & Obst.

The literature on hygromas is meager and the nomenclature confusing, and Smith thinks the term should be restricted to thin-walled, multilocular cysts containing clear fluid, lined with endothelial cells and possessing unusual tendency to grow.

These tumors vary in size from small affairs to enormous disfiguring growths, usually occurring in the neck and sometimes extending downward under the clavicle, penetrating the mediastinum or passing under the clavicle into the axilla or pectoral regions. They are frequently congenital and are usually seen in children. They are probably

embryonic sequestrations of lymphatic tissue with the power of persistent growth (Dowd).

The operative rarity of these cases is responsible for incorrect diagnoses, 96 cases only being reported. Undoubtedly such cysts have been removed and classified as of bronchial or thyroglossal origin. They grow to enormous size and do not tend to spontaneous recovery. LEO G. DWAN.

Massenbacher, J.: Fascia Tumors (Über Fascientumoren). *Beitr. z. klin. Chir.*, 1913, lxxxviii, 69.
By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author's work is based on a study of 27 cases from the literature since 1890 and of 9 from the Breslau Clinic since 1904: 4 of these were in the abdominal wall, 5 in the fascia of other parts of the body. His conclusions are as follows:

New-growths of the fascia of the entire body, not simply of the abdominal wall, should be included under dermoids. Next to the abdominal wall the location of choice is the extremities. Often dermoids are not recognized because of their small size.

Of the abdominal wall tumors the greater part originate in the posterior sheath of the rectus, next from the aponeurosis of the oblique muscles of the abdomen, and most rarely from the epigastrium. The point of origin in the extremities is the superficial fascia of the thigh, especially Scarpa's triangle. These tumors, which are more frequent in women, especially in those who have borne children, generally appear in the third and fourth decades, but congenital ones have been observed in children, and multiple tumors have been known. It is worthy of note that they may be attached to the periosteum of neighboring bones, as, for instance, the xiphoid process. They vary from the size of a hazelnut to 17 to 22 kg. The severity of the symptoms varies with the size, but even small tumors may cause pain. The rapidity of growth depends on their histological structure, whether they are fibroma, fibromyxoma, cystosarcoma, osteoma, and also on

their richness in cells, which increases greatly in pregnancy — there are sometimes muscle elements in these fascia tumors.

As for etiology, in addition to pregnancy, mentioned above, nævus and trauma have been suggested. The differential diagnosis may be very difficult in large tumors. The only treatment is operation. The prognosis depends on the microscopical picture.

EUGEN SCHULTZE.

Giertz, K. H.: Fascia Lata as a Substitute for Tendons and Ligaments (Über freie Transplantation der Fascia lata als Ersatz für Sehnen und Bänder). *Deutsche Ztschr. f. Chir.*, 1913, cxxv, 480. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Giertz, in spite of unfavorable external conditions, had very successful results the first time in trans-

planting pieces of fascia lata to replace extensive losses of substance in tendons. In one case he replaced 15 cm. of all three extensor tendons of the thumb.

He lays great stress on the importance of passive movements from the first day after the operation, which can be carried out without any injury. In one case the lateral ligaments of a flail-joint at the knee were successfully replaced by strips of fascia.

These three cases show that fascia lata can be used to replace tendons in the human subject. Very long sections of tendon can be replaced, and the fascia holds extraordinarily well, even under the least favorable conditions, and forms tendons with completely normal physiological function.

KIRSCHNER.

MISCELLANEOUS

CLINICAL ENTITIES — TUMORS, ULCERS, ABSCESES, ETC.

Graef, W.: Trauma and Tumor (Trauma and Tumor). *Zentralbl. f. d. Grenzgeb. d. Med. u. Chir.*, 1913, xvii, 603.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The question of whether trauma can cause true tumor formation has not been proved experimentally and the results of clinical observation are by no means uniform. It is certain that artificially produced atypical epithelial proliferation has nothing to do with true malignant new-growth. In general there is more frequently a history of trauma in sarcoma, and of repeated thermic or chemical irritation in carcinoma. The latter is evidence in favor of Virchow's irritation theory. The appearance of benign tumors after trauma seems to be a rarity. Injury causes only a part of the traumatic epithelial cysts, also of lipomata, which are more frequently developed after a chronic irritation.

In adenoma, fibroma, myxoma, angioma, myoma, and neuroma a traumatic etiology can only exceptionally be conclusively proved. This is not true of the different forms of osteoma. Here it is easier to demonstrate the connection with an injury, very frequently with a kick from a horse; these tumors are more frequent in youth, while the other forms of tumors increase with age and reach the maximum in the fifth decennium.

The growth of osteoma is rapid at first but soon becomes stationary, and this is the time for operation. In chondroma and enchondroma, traumatic origin is often probable; the latter are frequently mixed tumors of malignant origin and bad prognosis and form a transition to the true malignant tumors. These are the chief tumors caused by trauma.

Sarcoma and carcinoma must be considered separately; the common designation of cancer used for etiological and statistical purposes cannot be made

use of. Carcinoma of the breast seems to be of traumatic origin most frequently. A history of bruising is often reported, and the prevailing location in the upper, outer quadrant is of significance. In carcinomata of the lips, tongue, face, and extremities appearing from the fourth to the sixth decade, there is scarcely ever a history of violence, but more frequently of repeated irritation.

A traumatic origin—preëxistence of inflammation and ulcer—for internal cancer seems the most doubtful. In röntgen carcinoma an overdose has been described as the cause, and such an accidental origin has been admitted. Tumor formation has also been attributed to direct infection, as, for example, from injury during operation. The sarcomata regarded as traumatic generally affect young men in the laboring classes during the third decade and are generally due to moderate or severe injury with a blunt instrument chiefly to the lower extremities. Round-cell sarcoma of the soft parts is the prevailing type.

It is a question whether there is a traumatic origin for multiple myelomata. It has been denied on the ground that this is a systemic condition. It is doubtful whether trauma may not be held responsible, if not for the origin, at least for the localization.

The author discusses the awarding of damages for tumors caused by trauma, in which cases the symptoms of the new-growth should have appeared in general within two years, but with the so-called transition symptoms a much longer period may pass by. A hitherto latent tumor may be brought to light by a trauma, either because it incites it to more rapid growth or because it leads to a more searching examination; spontaneous fractures are cited as examples. As there is so little light on the matter trauma must be assigned as the cause of tumor only with great caution, and the author warns against the increasing tendency to recognize such a connection.

FIEBER.

Cumston, C. G.: Diabetes and Surgical Operations.*Boston M. & S. J.*, 1914, clxx, 316

By Surg., Gynec. & Obst.

That diabetics can be operated upon with a successful outcome has been repeatedly shown. The chances for recovery are much greater, however, when the patient has been subjected previously to an antidiabetic diet to reduce the glycosuria as much as possible. This diet should be followed until the patellar reflex has returned, if it was found absent. (The urine should not contain acetone or β -oxybutyric acid). The treatment should be very minute in detail, although there have been many successful operations performed where time did not allow of a thorough dieting.

The author's cases are subjected to a diet consisting of broiled meat, potato, and gluten bread, and purée of green vegetables. Bicarbonate of soda and Vichy water are given as a routine. Opium is used to check the glycosuria and to limit the thirst and hunger. Among other drugs used are antipyrine, arsenic, valerian, quinine, and various acids.

Wherever possible, local anæsthesia should be the choice. Chloroform is contra-indicated because of its action upon the liver. Ether, preceded by ethyl chloride or somnoform, is advocated where a general anæsthetic is necessary.

Absolute asepsis is imperative. Diabetics are especially liable to infection and a slip in technique which in the ordinary case would show no bad results might result fatally in the case of a diabetic.

J. H. SKILES.

Kraus, F.: Diabetes and Surgery; Short Report Containing Also the Views of Von Naunyn, Van Noorden, Minkowski, Payr (Diabetes und Chirurgie; Kurzes Referat, enthaltend auch die Ansichten von Naunyn, Van Noorden, Minkowski, Payr). *Deutsche med. Wchnschr.*, 1914, xl, 3.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The individual is often impressed with fatal cases he has heard of and exaggerates the danger of operation. The internist should not frighten the diabetic and his family unnecessarily before the operation, for beyond doubt any psychical shock, even the fear of operation, tends to increase the glycosuria, or even under some circumstances gives rise to it. The determination of the sugar content of the blood is quite as important as careful urine examination. A case of diabetes with high glycæmia offers an unfavorable prognosis even if the sugar can easily be made to disappear from the urine. Too abrupt disappearance of sugar may cause coma; but even if acetone is present in the urine, a post-operative coma is not necessarily an acid coma.

PAYR holds the presence of both acetone and diacetic acid, or beginning coma, as absolute contra-indications for operation; abscesses, carbuncles, phlegmon and gangrene have, however, been operated upon even in these severe forms of diabetes. The healing of the wound depends chiefly on the degree

of arteriosclerosis in the region operated upon, provided the operation is performed on non-infected tissue. The essential point in judging the severity of the diabetes is not the momentary sugar content of the urine, but the possibility of freeing the urine from sugar, and a certain tolerance for carbohydrates.

All operations not necessary for the maintenance of life should be avoided. Inhalation anæsthesia should be limited as much as possible. The operation should be carried out with the simplest possible technique. Esmarch's bandage should be avoided.

NAUNYN tries to reduce the glycosuria before the operation, if there is time; but he does not think the patient should be put on an unusually severe diet a few days before the operation. It is preferable to risk operation with high glycosuria. Acidosis is much more dangerous than glycosuria: it increases the danger in the healing of the wound, and threatens with coma. This occurs most frequently with chloroform anæsthesia, but may occur with any sort of general or local anæsthesia.

VAN NOORDEN advises the giving of large doses of sodium bicarbonate to every diabetic before operation. The resistance of the tissues is decreased in diabetics even when there is no infection. There is great danger of hæmorrhage especially in cataract operations. Local anæsthesia is preferable to general anæsthesia. According to MINKOWSKI, the severity of the diabetes and the severity of the operation determine the prognosis, but neither one is absolutely decisive. The diabetes may increase in intensity after the operation; acidosis may appear, or if present may increase in intensity. The anæsthetic must be carefully chosen. All measures that injure the tissues must be avoided. After the operation the diet must be regulated, the most essential point being the abundant administration of alkalies.

COLLEY.

Lambert, A. V. S., and Foster, N. B.: The Dietetic Treatment of Gangrene in Diabetes Mellitus.

Ann. Surg., Phila., 1914, lix, 176.

By Surg., Gynec. & Obst.

The purpose of the paper is to call attention to the fact that the usual operative procedures in diabetic patients are notoriously unsatisfactory in their ultimate results, also to some factors which, in part, at least, are the cause of the failures, and to suggest a different mode of treatment and emphasize the importance of a proper diet for these patients.

The conditions referred to are those changes which take place in the extremities, which are classed as diabetic gangrene and more properly spoken of as gangrene in diabetes.

The authors report three cases somewhat in detail, which show that these changes in the extremities are not always cases of gangrene, though often considered as such, but simply infections which run a course rendered peculiar by having occurred in diabetic subjects. Many theories have been advanced as to the nature of the process and

its underlying causes. There seem to be several factors, all or any combination of which may be present in a given case. There is an infection with micro-organisms in every case and there is no specific organism but the common pathogenic forms.

In addition, marked arteriosclerosis or a marked alcoholic diathesis may be present. The authors believe a process, analogous to Raynaud's disease, appears in certain cases. Several considerations suggest that it is, possibly, the increased amount of sugar in the circulating blood which may have reduced the resisting power of the cells. If the last hypothesis be correct, it would explain the amelioration of symptoms following successful dietary regulation, since this regulation lowers the percentage of blood sugar, which is the ultimate object.

It is not their contention that every case of gangrene is of the type which yields to the dietary regulation. Fulminating cases, in which high amputation is indicated, occur occasionally, but it is rational to give each case as thorough a course of dietary treatment as possible, especially as the results of surgical treatment are most unsatisfactory.

It is necessary to restrict the carbohydrate ingest to an amount which is completely utilized by the patient. At the same time, it is well to remember that the total withholding of carbohydrates for more than a few days at a time may also lead to injury to the patient. The problem then is to find the amount of starch to give.

The authors take this question up in some detail and have formulated the diet used by them into two tables as follows:

TABLE I

Breakfast: Eggs, chops, broiled chicken, fish (fresh, salt or smoked), ham, bacon; tomatoes, onions, mushrooms (broiled or fried); coffee, 1 tablespoonful cream, saccharine to sweeten.

Lunch: Clear meat broths, meat of all kinds, game, poultry, fish; green vegetables served hot with butter sauce, spinach, Brussels sprouts, string beans, asparagus, artichokes; salad of lettuce, endive, cucumber or tomatoes, with oil and vinegar, and any kind of cheese.

Dinner: Clear broths, *e.g.*, consommé; meats same as lunch; artichoke root as substitute for potato, cabbage, asparagus, spinach, string beans served hot; gelatine jellies and custards sweetened with saccharine; nuts of any sort, except chestnuts. Black coffee (claret or whiskey, if desired).

TABLE II

The food in this list to be taken only in the amounts ordered.

	Portion	Equals Number of Units
Soups:		
Bean.....	Average	1
Clam chowder.....	Average	1
Cream of corn.....	Average	2
Pea purée.....	Average	1
Potato.....	Average	1
Tomato.....	Average	1

Vegetables:

Beans, baked.....	2 tablespoonfuls	2
Beans, butter.....	2 tablespoonfuls	1
Beans, lima.....	2 tablespoonfuls	2
Beans, kidney.....	2 tablespoonfuls	2
Beets.....	2 tablespoonfuls	1
Corn, green.....	1 ear	2
Onions.....	2 onions	1
Corn, canned.....	2 tablespoonfuls	2
Green peas.....	2 tablespoonfuls	1
Potato, baked.....	1 medium sized	3
Potato, boiled.....	1 medium sized	3
Potato, mashed.....	2 tablespoonfuls	2

Fruit:

Apple.....	1 medium sized	2
Blackberries.....	2 tablespoonfuls	1
Currants.....	3 tablespoonfuls	1
Huckleberries.....	2 tablespoonfuls	1
Orange.....	1 medium sized	2
Peach.....	1 medium sized	1
Pear.....	1 medium sized	2
Plum.....	2 medium sized	1
Raspberries.....	3 tablespoonfuls	1
Strawberries.....	4 tablespoonfuls	1

Cereals:

Bread, slice 3 x 4 x ½ inch....		1
Hominy, boiled.....	1 tablespoonful	1
H-O, boiled.....	2 tablespoonfuls	1
Macaroni, boiled.....	2 tablespoonfuls	2
Macaroni, baked with Cheese.....	2 tablespoonfuls	2
Oatmeal, boiled.....	2 tablespoonfuls	1
Rice, boiled.....	1 tablespoonful	2
Shredded wheat biscuit.....	1	2
Spaghetti, baked with tomato.....	2 tablespoonfuls	2

EDWARD L. CORNELL.

Janeway, H. H., and Ewing, E. M.: *The Nature of Shock.* *Ann. Surg.*, Phila., 1914, lix, 158.

By Surg., Gynec. & Obst.

The authors present a summary of their investigations into the various theories of shock and the experimental data supporting conclusions which they have arrived at. Crile's fatigue of the vasomotor centers and consequent lowering of blood-pressure until the cerebral centers no longer receive sufficient blood supply to enable them to functionate normally is the first theory discussed. No one can fail to admit the important association of a diminution of blood-pressure with the onset and development of shock.

Janeway and Ewing state that their work in the main, in agreement with that of Howell, Porter and Meltzer, demonstrates that: (1) Low blood-pressure is an important symptom of shock, but an animal may pass into a state of shock with a blood-pressure which is still far above a point below which the nervous system fails to functionate normally. (2) It is unlikely that changes either in blood-pressure or in the force and output per beat of the heart are inaugurated by fatigue of the nerve-centers. (3) Shock in some cases is of reflex and in other cases of local peripheral origin.

The authors then inquired into the causes which lead to shock before blood-pressure begins to fall. From experimental data they conclude that (1)

shock produced by hyperrespiration is not due to diminished CO_2 , but to some factor which is dependent on increased intrathoracic pressure, such a condition as the interference of the venous return to the heart; (2) that shock following ventilation of the abdominal cavity and manipulation of the intestines is not due to diminished CO_2 , but to handling the intestines; (3) that shock following handling of intestines is not due to exhaustion of nerve-centers is proved by the rapid recovery of animals in a state of shock following transfusion.

In conclusion the authors make the following statements: "By handling of the intestines a complete splanchnic paralysis of local peripheral origin is produced, and it is this paralysis which causes the subsequent fatal fall in blood-pressure, and not exhaustion of the nerve-centers. If trauma to the sensory nerves is a factor in production of shock in an unconscious animal, it is wholly subsidiary to other factors and it is questionable whether it was apparent in our experiments.

"The all important factor in the development of shock in so far as the forms which we have studied may represent shock in general, is loss of vasomotor control. The mechanism of this loss and its maintenance is important. The loss of control and its maintenance is never caused by acapnia or central nervous exhaustion. Aside from afferent impulses, more especially splanchnic sensory impulses which may have initiated the shock and contributed to it, the loss of control was always due to local peripheral causes, which in our work were mechanical obstruction, loss of blood, and trauma to the viscera."

ISIDORE COHN.

Petroff, N. N.: The Life of the Tissues Outside the Organism. (Das Leben der Gewebe ausserhalb des Organismus). *Vrach Gaz.*, 1913, No. 30, 1039.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Attempts to cultivate the tissues outside the body are, in reality, only imitations of nature, based on the fact that, after the death of the individual, the different tissues live for varying lengths of time. Embryonic tissues have the greatest capacity for continued life; next come connective tissue and epithelium; the nerve tissues die a few minutes after the blood supply is stopped.

A further basis for the new theory are the facts that after death, movements of the head backward are noticed, that the hearts of recently killed animals continue to beat, etc.

The first systematic study of the independent life of the tissues was made by Bert, who transplanted pieces of rats' tails under the skin of rats and observed that they continued to grow. Further work has shown that epithelium can live independently for weeks, osteoblasts for several days. The best results are obtained by autotransplantation, and after that by transplantation to related animals, and then animals of the same species. Attempts on animals of different species have always failed.

Ehrlich succeeded in the transplantation of car-

cinoma that had been kept at a low temperature for two years. Petroff himself injected an emulsion of macerated guinea pig embryos into adult animals with a needle and observed that different kinds of tissues developed from them, and lived for two and one-half years. Further experiments relate to the planting of tissues in various media. In the most important of these experiments, the heart, the uterus, and the liver have been isolated and kept alive by passing a continuous current of Locke's or Ringer's fluid through their blood-vessels. Roux was the first investigator to transplant cells into egg albumen. Harrison and Burrows have grown tissues in lymph and blood-plasma, while Carrel has extended these experiments.

Technical difficulties are encountered in keeping the plasma sterile; for this purpose the blood is received in sterile paraffine vessels and centrifuged. The growth of small cultures is observed in hanging drops, of larger ones in Grabitschew's dishes; emigration and reproduction of cells can be observed. The best objects for experimentation are embryonic tissues, the best culture medium blood-plasma of an animal of the same species. Growth is possible on the plasma of another species, but it is slower and giant-cells develop as signs of degeneration. On this nutrient medium tissues grow for about 8 days; by being sprinkled with lymph or Ringer's fluid or by new implantations their length of life can be prolonged. Chemotropism can be observed in cultures of tissues. The addition of thyroid substance to the nutrient medium hastens the growth. In the presence of an antigen, antibodies are formed in the cultures. VON DEHN.

Walton, A. J.: On the Survival and Transplantability of Adult Mammalian Tissue in Simple Plasma. *J. Exp. Med.*, 1914, xix, 121.

By Surg., Gynec. & Obst.

Walton describes cultures of thyroid, spleen, testicle, kidney, and liver tissue in simple plasma, without the addition of tissue extract. He finds that the growth of mammalian tissue can be prolonged by transference to fresh medium. In a few cases this growth was continued for 10 or 12 generations, up to a period of about 40 days, but in the majority of cases growth ceased after 3 or 4 generations.

JAMES F. CHURCHILL.

Walton, A. J.: The Technique of Cultivating Adult Animal Tissues in Vitro; and the Characteristics of Such Cultivation. *J. Pathol. & Bacteriol.*, 1914, xviii, 319.

By Surg., Gynec. & Obst.

The author explains in detail the method and procedure incident to obtaining the growth of adult tissues in blood-plasma.

He describes the growth of these tissues in specimens made from the spleen, thyroid, kidney, testicle, and liver and carefully follows their growth hourly for the first day and the resultant changes of each consecutive day for six days.

The spleen is characterized by an overgrowth of round cells. In the thyroid the parenchymous cells predominate for the first four days, after which there is an overgrowth of connective tissue. In the kidney the new-growth is mostly parenchymatous, cuboidal cells predominating. The testicle and liver show similar changes.

EUGENE CARY.

Castaigne, Touraine, and François: Severe Tetanus; Large Doses of Serum; Recovery (Tétanos grave; Sérothérapie massifs; Guérison). *Bull. et mém. Soc. méd. d. hôp. de Par.*, 1913, No. 38, 870.

By Journal de Chirurgie

Tetanus developed in a young girl of 14, ten days after an injury to the leg. Three days after the first attack, which was very severe, an injection of serum was made at the Pasteur Institute. The temperature was 38°, pulse 120; she had attacks of pharyngeal spasms. Within 12 days afterwards 760 ccm. of serum were injected by various methods: intravenous, spinal, subcutaneous, paraneurotic, rectal. The patient recovered.

The interest of the case lies in two facts: (1) It was almost a pure case of serum treatment; the only other medication given was 22 gm. chloral in 7 days. (2) In spite of the high dosage there were only moderate signs of serum sickness: urticarial or generalized scarlatiniform erythema and rise of temperature. The authors add some similar cases to their own. Netter said he believed in the efficacy of large doses of antitetanic serum. He cited in support of his opinion the recent statistics of Penna of Buenos Ayres, who by the use of large doses of serum from the Pasteur Institute cured 15 out of 16 cases of tetanus.

MAURICE CHEVASSU.

SERA, VACCINES, AND FERMENTS

Boas, H.: The Wassermann Reaction with Special Consideration of Its Clinical Availability (Die Wassermannsche Reaktion mit besonderer Berücksichtigung ihrer klinischen Verwertbarkeit). Berlin: S. Karger, 1914.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The great approval which Boas' work has met with everywhere caused him to issue a second edition, in which he reviews the enormously increased literature of the subject and discusses the availability of the Wassermann reaction for clinical purposes, as well as the new improvements and the parallel reactions which are recommended. He writes with great knowledge and experience and makes the difficult subject unusually clear and readable. The question of the specificity of the Wassermann reaction is still to some extent under discussion, but he maintains unreservedly that if it is positive it proves that syphilis still exists. The only exceptions are in patients with scarlet fever or who are under an anæsthetic; they may show a weakly positive reaction. The work can be recommended to non-specialists as well as specialists.

LINSER.

Döptér and Pauron: Treatment of Gonorrhœal Arthritis and Gonorrhœal Orchitis, with Besredka's Sensitized Antigonococcus Vaccine (Traitement du pseudo-rumatisme et de l'orchite blennorrhagiques par la méthode du vaccin antigonococcique sensibilisé de Besredka). *Bull. et mém. Soc. méd. d. hôp. de Par.*, 1913, 386.

By Journal de Chirurgie.

Delighted by the results obtained by Cruveilhier in the treatment of the complications of gonorrhœa with the antigenococcus vaccine which he had prepared at the Pasteur Institute by Besredka's method, Döptér and Pauron asked him to apply his method to several cases in their service.

They describe in detail two cases with arthritis, appearing first in the knee and ankle-joints, later in the wrist-joints, with recovery in both cases. In the first case, however, the urethral discharge persisted and contained gonococci.

Cruveilhier cites a case published by the Biological Society of a gonorrhœal arthritis of the hip which, although it had kept the patient in bed for six months, improved very rapidly after injection of the virus vaccine. He has also studied the action of this vaccine on gonorrhœal orchitis and epididymitis. In 5 cases he found that the pain stopped in from 12 to 24 hours after the injection and that the swelling decreased rapidly. Gonorrhœal urethral discharge is only slightly influenced by the injection.

Treatment with sensitized vaccine seems to be a great advance in the therapeutics of the most painful and serious complications of gonorrhœal infection.

MAURICE CHEVASSU.

BLOOD

Hilse, A.: Fat Transplantation to Control Hæmorrhage from Abdominal Organs (Die freie Fetttransplantation bei Blutungen der parenchymatösen Bauchorgane). *Zentralbl. f. Chir.*, 1913, xl, 1849.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

Flaps of omentum, fascia, and striated muscle have previously been used to stop hæmorrhage from parenchymatous organs. Since these methods have more or less disadvantages, although they stop the bleeding satisfactorily, Hilse looked about for a new method. He used subcutaneous fatty tissue for transplantation, as this is always present in sufficient quantities. The only disadvantage that he sees in it is that if large flaps of fat are removed the edges of the wound are undermined.

The experiments were made on rabbits, from which pieces of the liver, spleen, and kidney had been resected. The fat which was taken from the thigh was freed of fascia; otherwise the stopping of the hæmorrhage might have been attributed to the fascia, and the flaps of fat subjected to a microscopical examination. He does not regard the animal experiments of Poljenoff and Ladygins as decisive, for their fat was not freed of fascia. The flaps of fat were applied to the bleeding organs so that the edges of the flap projected beyond the cut

edges. Before the flaps had been fastened in position the bleeding generally stopped within one to three minutes — secondary bleeding was never observed.

In some animals, killed 2 hours to 5 days after the operation, there was a hæmatoma between the fat flap and the wounded surface; the fat was pushed outward a little, and the blood had coagulated under it. In parallel experiments with fascia it seemed to Hulse that the bleeding was not stopped so quickly. With flaps of omentum the effect was as quick as with subcutaneous fatty tissue. In two human cases of gall-bladder operations, hæmorrhage from the bed of the liver was stopped in a short time with flaps of omentum and subcutaneous fatty tissue. The post-operative course was normal in both cases.

KOLB.

Crotti, A.: Indirect Transfusion of Blood. *Surg., Gynec. & Obst.*, 1914, xviii, 236.

By Surg., Gynec. & Obst.

The author gives an original technique for indirect transfusion of blood. Although simple, it has evidently been carefully developed through laboratory and animal experimentation and finally used in actual practice. The working method is as follows:

The cephalic vein, in both donor and recipient, is exposed and prepared in the usual manner, then a blunt needle which has been adapted to a syringe is introduced into the vein of the donor, in the opposite direction of the blood current; blood is aspirated into the syringe, and reinjected into the vein of the recipient, in the same direction as the blood current.

The transfusion can be repeated as often as is deemed necessary without coagulation, provided needle and syringe are freshly washed each time in a warm normal salt solution. The best plan is to have two needles and two syringes and have one set washed by an assistant while the other is in use. When transfusion is terminated, the veins are ligated and the skin incision closed. By this method any amount of blood can be transfused safely from one patient to another and the exact amount of blood known. The fact that the blood is venous seems to be without importance. Crotti's first case would seem to prove that it is not necessary to transfuse large quantities of blood to save a patient. However, it can be done if deemed necessary.

The author reports two cases where this method has been carried out.

BLOOD AND LYMPH VESSELS

Bunting, C. H., and Yates, J. L.: An Etiologic Study of Hodgkin's Disease. *J. Am. M. Ass.*, 1914, lxii, 516.

By Surg., Gynec. & Obst.

Bunting and Yates have previously reported that by repeated injections of the diphtheroid organism cultivated by them from cases of Hodgkin's disease, in monkeys there were produced

lesions of the lymph-nodes showing all the essential features of early Hodgkin's disease in man. Since making this preliminary report the authors' experimental work has demonstrated fully the pathogenicity of the culture they were using and has further shown that the virulence of the organism to the monkey may easily be increased even to the point of producing death of the animal after a relatively acute illness. The great difficulty seems to be to secure infection and at the same time to avoid virulence so great as to produce extensive necroses, softening, and even suppuration. The working space between these two limits seems very narrow.

Extensive necrosis and leucocytic infiltration of the glands may seem foreign to the usual clinical picture of the lymph-nodes in Hodgkin's disease, yet a recent clinical case has demonstrated that even in man the virulence of the organism may be such as to lead to these features.

Their results indicate that the survival of an animal for the requisite length of time is all that is needed for a demonstration of the chronic lymph-node picture seen in the well developed case of Hodgkin's disease.

LEO G. DWAN.

SURGICAL THERAPEUTICS

Ssokoloff, I. A.: Effect of Collargol on Infection (Über den Einfluss des Kollargols auf die Infektion). *Ann. d. Kais. Univ. Odessa*, 1913, v, 1.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

After discussing the literature of the question the author gives the histories of 5 cases of sepsis of different origins which he treated with intravenous injections and enemas of collargol. For intravenous injection he used 10 ccm. of a 1 to 2 per cent solution; by rectum he gave as much as 5.0 collargol. The injections were made once or twice daily according to the severity of the case. Ordinarily the temperature rose 4 to 6 hours after the intravenous injection to 40 degrees and then gradually sank.

In the author's cases there was generally an improvement after the first injections, and four cases recovered; only one case of severe staphylococcus pyæmia died. The blood examination was valuable in prognosis, which in the favorable cases showed an increase in leucocytosis after the injections of collargol.

Encouraged by the above results, the author tested the effect of collargol on the growth of bacteria. He carried out his experiments with coli communis, anthrax, and staphylococcus aureus. A collargol content of 1:1000 in the nutrient medium was sufficient to kill the two former, but 1:200 was required for the staphylococcus. By intravenous injection a sufficient concentration could be reached to destroy the former kinds, but 1:200 could not be attained. He further describes his experiments with subcutaneous, intravenous, and intraperitoneal infection of rabbits with the above-named bacteria and the effect of collargol on the course of these infections in their various stages.

In subcutaneous infection with colon bacilli all signs of local inflammation were less, there was no necrosis of tissue and there was less rise in temperature. In the exudate of control animals there were many bacteria and few leucocytes; in the treated animals this was reversed. In subcutaneous infection with anthrax the local symptoms were milder, but the animals all died of general infection, though not so soon as the control animals.

In subcutaneous infection with staphylococcus the control animals developed abscesses and died of general infection, while the treated animals only had oedema at the site of injection which disappeared after five days. In intravenous and intraperitoneal infection with colon bacilli the animals treated with collargol recovered while the control animals died of sepsis. The collargol in these experiments had no effect on the course of the staphylococcus infection; no experiments with anthrax were made in this series. In the clinical cases as well as in animal experiments the author found a marked polynuclear leucocytosis after collargol injections. In order to decide whether the collargol acted as a bactericide or whether the results were produced by the leucocytosis, he placed a rabbit, infected with colon bacilli and treated with collargol, on ice, which produced a marked leukopænia and especially a decrease in the polymorphonuclears, yet the animal recovered.

In conclusion the author describes a series of experiments in which he confirmed the results of previous authors that the collargol in the blood and exudates was found for the most part in the leucocytes, and among the organs in the liver and spleen.

He comes to the following conclusions: (1) The collargol acts on the infection chiefly through its bactericidal properties; (2) it is contained for the most part in the leucocytes; (3) this explains its slight effect on subcutaneous infection with anthrax, which seems to be in contradiction to the results of experiments *in vitro*, because anthrax infection produces a serous exudate without migration of leucocytes. It also contrasts with the results in local staphylococcus infection, for here an exudate rich in leucocytes is formed. (4) Besides its bactericidal effect the collargol produces a polynuclear leucocytosis and a rise in temperature which act as auxiliary factors in the struggle with the infection. (5) Therefore collargol can be used with good results if it has a bactericidal effect on the bacteria causing the sickness and if there is pus. In bacteræmia it is significant that the collargol is deposited by the blood chiefly in the same organs as the bacteria. Under the above conditions the collargol may be of great use if it is given early and in large doses.

RIESENKAMPFF.

Beck, E. G.: The Present Status of Bismuth Paste Treatment of Suppurative Sinuses and Empyema. *Ann. Surg.*, Phila., 1914, lix, 145.

By Surg., Gynec. & Obst.

The author takes up the use of bismuth paste in all its phases, citing several cases as examples

and giving a summary of the results of other men throughout the world.

The causes of the failure of bismuth paste to do the work required are several. The most important cause is the failure of the paste to reach the seat of the trouble. It is essential that all branches of the sinus should be filled with the paste. Sequestra, foreign bodies, and faulty technique, and an insufficient knowledge of the rules that have been laid down for the injection of the paste, have been the principle causes of the failures.

To insure success in employing bismuth paste the essential points are summarized as follows:

1. A correct diagnosis should be made by all methods available and same should be corroborated with stereoscopic radiographs before an injection is made.

2. Before attempting to employ this method, the operator should acquaint himself thoroughly with the technique.

3. The proper instruments should be employed in order to carry out the technique correctly.

4. The patient should be kept under constant observation to prevent bismuth intoxication.

5. The secretions from the sinus should be examined before the first injection, by slide and culture, and often by the inoculation of guinea pigs; then three days later the sterilizing effect of the injection should be tested.

6. As long as the sinus contains micro-organisms it should be reinjected, but if it is found sterile it should not be reinjected.

7. It is good practice to wait at least one week after the first injection before repeating it.

8. A stereoscopic radiograph of the parts affected should always precede the first injection, in order that the presence of sequestra or foreign bodies may be detected. The shadow of the paste might make their presence obscure.

9. Following the injection, a second set of stereoradiographs should be taken in order to make a correct anatomical diagnosis.

10. In case a foreign body or sequestrum is present, the injection is useless, operation being the only means.

11. Acute suppurative processes should not be treated with bismuth paste; only chronic suppurations, both tubercular and non-tubercular.

12. Bismuth poisoning may be easily prevented by using only small quantities, or, when large quantities are required, they should not be retained longer than ten days, and the patient should be carefully watched.

13. Fæcal fistulæ and other post-operative sinuses are very favorably affected by bismuth paste treatment.

14. A ten per cent bismuth-vaseline may be used in cold abscess. In practically all instances the secondary infection can be prevented, providing the technique is carefully observed.

EDWARD L. CORNELL.

Frühwald, R.: The Diagnostic Value of Intravenous Injections of Arthigon (Die diagnostische Verwertbarkeit intravenöser Arthiginjektionen). *Med. Klin.*, 1913, ix, 1799.

An intravenous injection of 0.04 or 0.05 of arthigon causes, in the great majority of women with gonorrhœa, a rise of temperature of at least 1.3 degrees, and a maximum temperature of 37.8 degrees has been attained. Women without gonorrhœa in the great majority of cases do not show this reaction. It may, therefore, be regarded as specific, but as some opposite results have been obtained, it is always well to confirm it by microscopical examination. The findings in women who have previously been infected with gonorrhœa, and in those who seem from the microscopical picture to have been cured, makes it probable that the reaction depends on the presence of gonococci. Repeated injections affect the reaction, therefore a negative reaction after more than two injections has no value; the reaction will be of service in doubtful cases. Probably it will show when recovery from a gonorrhœal infection has taken place.

RUNGE.

ELECTROLOGY

Freund, L.: Irradiation and Surgical Treatment of Malignant New-Growths (Die Bestrahlung und chirurgische Behandlung maligner Neubildungen). *Deutsche med. Wchnschr.*, 1913, xxxix, 207.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author discusses the impossibility of attaining certain cure of deep-seated malignant new-growths by röntgen or radium rays and of making a safe prognosis as to the result of treatment; however, the prospects are favorable in superficial cancers. He discusses 176 cases of malignant new-growths treated within twelve years; 19 were treated with radio-active substances and 157 with röntgen rays.

In 39 cases of mammary carcinomata, reported by the author, there were two unaffected and in all the rest improvement for a greater or less period, with recovery from subjective symptoms. In 5 cases after several years' latency there was recurrence that could not be controlled in any way; in one case, after 4 years' röntgen treatment, there was complete recovery. The author believes that ulcerated carcinoma of the breast is more amenable to cure by irradiation than subcutaneous ones, and, therefore, says that in amputation of the breast the sutures should not be too firm. He recommends treatment by Thiersch's transplantation. There is no clinical difference between treatment with röntgen rays, mesothorium, and radium.

LOHFELD.

Holding, A. F.: Technique in Radiotherapy, with Especial Reference to Deep Therapy as Practiced at Freiburg by Krönig and Gauss. *Med. Rec.*, 1914, lxxv, 335. By Surg., Gynec. & Obst.

Holding's original article contains (1) a statistical table of the number of cases reported in the medical literature, results obtained, etc., in cases of myoma,

metritis, endometritis, and menorrhagia, treated by X-rays; (2) a table of the indications and contra-indications for X-ray treatment of these gynecological conditions; (3) a summary of the essential points of the Krönig and Gauss technique.

Of 938 cases of myoma, metritis, endometritis, and menorrhagia reported, and in which the end-results were known, there were 493 cases cured, 319 cases improved, 102 cases unimproved, 11 cases relapsed, 3 cases dead, and 63 cases developing an erythema.

Röntgen treatment of myoma, metritis, endometritis, and menorrhagia are indicated in all cases of myoma which are not infected or suspected of malignancy, particularly (1) in elderly patients; (2) when the size of the tumor is stationary; (3) if the tumor does not cause kidney or heart blockade; (4) if the tumor does not crowd the pelvis; (5) if the patient is deeply anæmic, diabetic, nephritic, bronchitic, arteriosclerotic, or possessed of a bad heart or large thyroid.

Contra-indications for röntgen treatment are: (1) Large, rapidly growing tumors; (2) all submucous polypoid growths; (3) adenomyomata; (4) infected or degenerating cases, or those suspected of malignancy; (5) cases of women below forty years with free bleeding and rapid development of the tumor.

The essentials of Krönig and Gauss's method are:

1. The utilization of deep penetrating X-rays, by using specially constructed tubes, reading Walter 6-8, Wehnelt 10-12,—filtering these rays through 3 mm. of aluminum, loofah sponge, and sensitized paper.

2. Administering $1\frac{1}{2}$ times the erythema dose (12-18 Kienböck) to the seat of pathology through small areas of skin 2-5 cm. square—"portals of entry"—14 portals of entry being on the abdomen, 10 on the back, 2 through the obturator foramina and 1 through the vagina.

3. These areas treated in continuous succession, the total number being completed in one or two days (which is called a "series of treatments"), followed by a period of non-treatment.

4. The period of non-treatment is 14 to 21 days, followed by another series of treatments and so on, until the symptoms are controlled. A given area of skin is never to receive more than $1\frac{1}{2}$ -2 the erythema dose in a series.

5. "Cross-firing" of the rays, from the front, back, sides and ends.

6. Each "series of treatments" lasts 3 to 5 hours.

7. The tube, which is cooled by circulating water, is excited intermittently by the use of a "rhythmeur" in the circuit.

The advantages claimed for the Freiburg technique are: (1) Results are obtained in the shortest possible time; (2) the utilization of a greater amount of X-rays without danger to the skin.

Holding warns against "the widespread treatment of disease throughout the world, applied by men who do not measure their X-rays, and are not careful in regard to their therapeutic technique."

GYNECOLOGY

UTERUS

Sugimoto, T.: Pharmacological Testing of the Guinea Pig's Uterus (Pharmakologische Untersuchungen am überlebenden Meerschweinchen-uterus). *Arch. f. exp. Path. u. Pharmacol.*, 1913, lxxiv, 27.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Pituglandol, pituitrin, adrenalin, pilocarpine, atropine, nicotine, sodium oxalate, calcium chloride, barium chloride, tyramine, and histamine were used in the experiments. The author concludes:

1. Pituglandol in small or large doses stimulates the guinea pig's uterus.

2. Sodium oxalate causes lowering of the tonus and decrease of the pendulum movements, or heightening of tonus and increase of rhythmic spontaneous movements, probably varying with the degree of decalcification.

3. Calcium chloride causes an increased tonus in the decalcified organ.

4. Strophanthin stimulates in small doses, while in larger ones it causes a gradual decrease in tonus and cessation of movements.

5. Nicotine does not have any noticeable effect on the isolated guinea pig uterus, though with the organ *in situ*, injected intravenously it causes strong contractions.

6. Pilocarpine excites contractions. These contractions can, however, be stopped by small doses of atropine.

7. Quinine, even in small doses, causes strong contractions, with immediate decrease in tonus and paralysis.

8. Adrenalin has an inhibitory effect on the isolated uterus. The rhythmic spontaneous movements stop and there is a maximum lengthening of the muscle elements. This exhaustion also occurs after the organ has been stimulated to partial contraction with barium chloride.

9. Histamine causes contraction with cessation of spontaneous movements.

10. Atropine in small doses strengthens the movements of the uterus and paralysis is not produced even with large doses.

11. The increase of tonus caused by pituglandol or pilocarpine can easily be overcome by atropine.

ZOEPPRITZ.

Von Winiwarter, A. F. R.: Distribution of Extractives in the Non-Striated Musculature of the Uterus (Die Verteilung des Extraktivstickstoffes in der glatten Muskulatur des Uterus). *Arch. f. Gynäk.*, 1913, c, 530.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author carried out four series of experiments with the uterus of the horse: the pregnant uterus,

the non-pregnant uterus, and myomata. He tested first the total nitrogen, then the substances that are precipitable with phosphotungstic acid, the albumoses, the ammonia, the purin bodies, the carnosin, creatine, creatinine, and urea. He compared the findings with those in striated muscle and concludes: The extractives increase during pregnancy, in proportion to the increase in the volume of the uterine muscle, and preserve their usual proportion to each other. He found this proportionate increase in myoma also. BAUER.

Beckmann, W. G.: Mixed Mesodermal New-Growths of the Cervix (Zur Lehre der heterologischen, mesodermalen Neubildungen des Gebärmutterhalses). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, xxviii, 1123.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

A 22-year-old cachectic patient had had a bloody discharge for 2 months. A polyp which was found on the posterior wall of the cervix was removed and the cautery applied but in two weeks the patient was in the same condition as before. Another operation was performed but the cachexia increased and 7 weeks after the first operation she died. Post-mortem showed the pelvis filled with masses of polyps, made up of large, round cells with nuclei rich in chromatin; the blood-vessels were very abundantly developed; and here and there were masses of hyaline cartilage, with calcareous deposits in places, and some non-striated muscle fibers. The tumor came from the cervical mucous membrane, the muscular wall was intact, and there were no metastases.

This was a mixed tumor containing different differentiated tissues. This differentiation points to embryonic tissue. The tissues found — cartilage, bone, and unstriated muscle — originate from the mesoderm; therefore, the author calls the tumor a mixed mesodermic tumor of the cervix. As to the origin of such tumors Beckmann agrees with Wilms that, in embryonic life, undifferentiated tissue is displaced through the wolffian duct and reaches the uterus and vagina; by becoming differentiated later this causes the mixed tumor. Its growth is at first hindered by unknown causes, but later it grows irregularly and unrestrainedly — average duration 2 years, recurrence frequent. GINSBURGH.

Burckhard, G.: The Value of Exploratory Curettage in the Diagnosis of Carcinoma of the Body of the Uterus (Über den Wert der Probeausschabung zur Diagnose des Carcinoma corporis uteri). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxv, 34.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In four cases, the author has found that exploratory curettage in beginning carcinoma of the body

of the uterus has only a limited value. In spite of the negative histological results vaginal total extirpation was performed in all cases because of the clinical symptoms, and in each case there was a beginning carcinomatous process in the fundus. In doubtful cases, therefore, extirpation of the uterus that is indicated by the clinical symptoms should not be given up because of deceptive microscopical findings. SÜSSENGUTH.

Keitler, H.: Radium Treatment of Cancer of the Uterus (Zur Radiumbehandlung des Gebärmutterkrebses). *Wien. klin. Wchnschr.*, 1913, xxvi, 1839. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Radium and mesothorium should be regarded as nothing more than palliative measures. Operable carcinomata, even in the earliest stages, should always be operated upon, as no one can guarantee their radical cure by radium. After-treatment of operated cases by irradiation is, on the other hand, justifiable and often of great value. It must not be assumed, however, that mesothorium treatment is harmless; the process of absorption disturbs the general condition considerably. The secreting surface should be frequently cleansed and disinfected with tincture of iodine; the doses of radium, even when strongly filtered, should not continue over twelve hours and should have lapses of two to six days between them. The radium carrier should be adapted to the shape of the tumor and be brought as near as possible to the part to be treated. The tissue lying over the carcinoma may be incised. For cases that have not passed the bounds of operability too far, a preparatory radium treatment may be of value. IMMELMANN.

Chéron, H., and Rubens-Duval, H.: The Value of Radium in the Treatment of Uterine and Vaginal Cancer (Über den Wert der Radiumtherapie in der Behandlung der uterinen und vaginalen Krebse). *Fortschr. a. d. Geb. d. Röntgenstrahl.*, 1913, xxi, 229.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The chief points in the technique of radium treatment of inoperable carcinomata of the cervix, body of the uterus, and vagina are as follows: The use of Dominici's method of ultrapenetrating irradiation, with massive doses and increased filtration with increased size of the doses. The radium rays have an elective effect on the carcinoma cells which finally destroys them; this effect proceeds in the same way as the spontaneous defense of the organism against the cancer. In two cases there was cure of an inoperable carcinoma of the cervix after only two treatments, confirmed in the first case by autopsy, and in the second by histological examination of tissue from the uterus removed by hysterectomy. In the latter case, however, living cancer-cells were found in the pelvic glands removed with the uterus. The value of the treatment, which is local and dependent on the depth of penetration of the rays, lies, not alone in the cures, but in the

marked improvement in cases where all other treatments have failed.

In 158 cases treated in the manner described above, there was one certain, anatomically demonstrated recovery; 155 improvements, of which 93 were very pronounced and 46 of which were probably cures; in two cases the results were negative.

K. HOFFMANN.

Schauta, F.: Radium and Mesothorium in Carcinoma of the Cervix (Radium and Mesothorium bei Carcinoma cervicis). *Monatschr. f. Geburtsh. u. Gynäk.*, 1913, xxxviii, 503.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

After the use of 10 mg. mesothorium for 24 hours the author saw no effect except necrotic decomposition. Sixty-six milligrams of mesothorium with a lead plate 0.3 mm. thick and a silver plate 0.5 mm. thick were applied to the diseased place for 7 days. Radium was filtered through 2 mm. of lead, and 50 to 100 mg. were used for 8 to 9 days, and then a rest of 8 to 10 days given. Radium seemed more effective than mesothorium. His deductions on the effect of radium follow:

1. *Local effect.* After the first, or at latest the third series no microscopically unchanged carcinoma tissue could be found; many times no carcinoma tissue could be recognized at all. The infiltration of the parametrium sometimes remained stationary, sometimes decreased, and the nodular masses in the cervix disappeared. The effect is elective; healthy tissue was never affected.

2. *General effect.* Headache, loss of appetite, pain in the intestines and bladder, constipation and diarrhoea; sometimes rises in temperature disappeared 24 hours after the removal of the radium.

3. *Injurious effects.* Two severe hæmorrhages, 1 vesicovaginal fistula, 1 rectovaginal fistula,—although it is a question whether the fistulæ can be attributed to the radium.

In radium treatment, Schauta recommends that the following points be taken into consideration: The size and location of the carcinoma, the extent to which the septa between the vagina and rectum and vagina and bladder are involved, and the general condition of the patient; and that all operative cases should be operated on as before, preferably by the author's extended vaginal radical operation, which gives a mortality of only 3.6 per cent. After the operation a not too intense radium treatment is indicated. All inoperable and severe operable cases should be given radium treatment. It is contra-indicated, however, when the septa between the vagina and bladder or rectum are involved and in severe cachexia. A dose of 40-50 mg. radium is sufficient, and should be left in position 5 days; followed by ten days' rest and then renewed application. Care must be taken that local recovery is not mistaken for real recovery, which cannot be assured for from three to five years. Case histories of 16 patients treated are given. JAEGER.

Berdez: Röntgen-Ray Treatment of Myomata
(Über die Röntgentherapie der Myome). *Fortschr. a. d. Geb. d. Röntgenstr.*, 1913, xx, 393.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author reports 82 cases of myoma and 20 of uterine diseases. There were few failures; three times hæmorrhage began again with erythema with no serious complications. Following is a summary of the technique: Hard Muller's tubes and radiology tubes (9-11 W.); 3 mm. aluminum filter; distance from the skin 20 ccm.; two fields, one on each side, 9 ccm. in diameter. Irradiation is from two directions on each ovary, the apparatus being directed from above downward and from without inward. Compression of the field is produced by a Luffa pad to render the skin anæmic, and bring the ovary nearer the surface. Treatment is continued during the menses in order to make use of the increased circulatory activity to heighten the effect. Each field is treated until it assumes color III of Bordier's scale, 12 H. Five to six treatments are given in a series, one every other day with 3 weeks' rest between series. The results are satisfactory. In suitable cases Freiburger's method may be applied with Krönig's apparatus. MÜLLER-CARIOBA.

Philips, T. B.: Myoma and Sterility (Myom und Sterilität). *Dissertation*, Berlin, 1913.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

A detailed review of the literature follows the statistics of the Amsterdam Gynecological Clinic, which includes 1,904 myomata. Of these patients, 814, or 75.5 per cent, were married, and 241 of these, or 29.9 per cent, sterile; 264, or 24.5 per cent, were unmarried. Among the 814 married patients there were 1,905 children and 441 abortions, that is, 2.25 per cent children and only 0.55 per cent abortions, or counting out the nulliparæ, 3.21 per cent children and 0.8 per cent abortions. The author concludes:

(1) There is a certain coincidence of myoma and sterility, or at least decreased fertility.

(2) The proportion between nulliparæ and multiparæ is the same among myoma patients as among women in general.

(3) Fertility is less in married myoma patients than in women in general, and abortion more frequent.

(4) In myoma patients who abort, the tumor seems to be the cause of the abortion in about half the cases; generally the tumor follows the cessation of conception.

(5) Myoma is not an absolute reason for sterility, though they are often found together in the statistics.

(6) The combination of myoma with sterility is less in subserous myomata; with them abortion is less frequent and fertility high.

(7) In sterile married women intramural tumors predominate.

(8) Primary sterility (139 cases) is more frequent than secondary (32 cases); primary 81 per cent, secondary 19 per cent, at the Amsterdam clinic.

(9) In primary sterility the tumor increases with the age and duration of the marriage; in secondary sterility there is no fixed relation. On the average these patients come to the physician with tumors of the same size, but at a younger age. In unmarried myoma patients the tumor is larger the older the patient.

(10) In early cessation of the sexual life fertility is independent of the size of the tumor, which tends to show that it has developed after the cessation of sexual activity.

C. H. STRATZ.

Alexandroff, F. A.: Treatment of Fibromyoma of the Uterus with Röntgen Rays (Behandlung der Fibromyome des Uterus mit Röntgenstrahlen). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, xxviii, 1517.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author has used röntgen rays in 15 cases of fibromyoma of the uterus. He reports 3 of the cases in which the effects were the most marked.

The first case was a 47-year-old woman, who for 10 years had had menses lasting 2 to 3 weeks. The diagnosis was multiple fibroma. After irradiation, there was a cessation of hæmorrhage, except for a very slight menstrual discharge, and the tumor decreased in size.

The second case, a 40-year-old patient, was troubled with pain in the abdomen and profuse menstruation. The diagnosis was multiple fibromyoma. After irradiation for five or six months there was no more bleeding. The symptoms of the menopause decreased after scarification of the cervix and the tumor decreased in size.

The third case was a 39-year-old patient, who had pain in the abdomen and a slight menstrual discharge. Examination showed myoma of the anterior wall and marked oedema of the cervix. After irradiation for a month and a half the oedema disappeared, and the tumor became firmer. Menstruation ceased and the treatment was interrupted on account of severe symptoms of the menopause.

In the first two cases the rays acted chiefly on the ovary, producing oligomenorrhœa in the first and amenorrhœa in the second; in the third case they acted on the tumor itself, with retrogression of the oedema and the tumor. Absorption of the serous transudate was manifested by intoxication of the organism — symptoms of the menopause. In this retrogression of the oedema from the effect on the blood-vessels the author sees the chief factor in the decrease in the size of the tumor. The more cedematous and softer the tumor the surer the results. The effect of the rays on the tumor itself demands further explanation.

GINSBURG.

McGlenn, J. A.: The Heart in Fibroid Tumors of the Uterus. *Surg., Gynec. & Obst.*, 1914, xviii, 180.

By Surg., Gynec. & Obst.

The conclusions reached by the author are based on the study of 5,700 post-mortem records in the Philadelphia General Hospital. While admitting that fibroid tumors of the uterus are frequently

associated with cardiac disease, McGlenn denies the existence of the fibroid heart as a distinct entity. The study is divided into two parts. In the first part 131 cases of fibroid tumors of the uterus are tabulated. They are considered from the standpoints of race, age, clinical diagnosis, position of the tumor, size of the tumor, heart lesions present, and pathological cause of death. In the second series 113 cases of fibroid tumors of the uterus are contrasted with an equal number of cases of the same ages and races without fibroids, and the heart lesions present in both types compared.

The author discusses the various theories which have been advanced to explain the relationship between fibroid tumors of the uterus and heart disease. In considering the possibility of the existence of a fibroid heart he dismisses all theories except the following: (1) A toxin produced during the growth of the tumor causes degenerative changes in the heart and blood-vessels; (2) fibroid tumors of the uterus are only a local feature of a general process. He holds that none of the other theories advanced will fit every case, and that if these theories were true a constant heart lesion would be found present in all tumor cases and that in the largest tumors the most marked heart changes would be found. The study of the first series, however, does not bear out these contentions. In the series he found 35 distinct varieties of heart lesions, one of which, mitral sclerosis, was not present in more than 45 of the cases. He also found that the largest and most seriously diseased hearts were found in the cases with the smallest tumors.

In the second series of cases he shows that heart lesions are just as common in the non-fibroid cases as in the fibroid ones. The following are the conclusions submitted:

1. From this report a definite entity of a fibroid heart cannot be sustained.
2. If the fibroid tumors of the uterus were the cause of all the heart lesions described in this study, then every tumor, regardless of its size and situation, should be removed—a contention that the most radical would scarcely agree to.
3. Uterine myomata, occurring in middle and advanced life, are practically always associated with sclerotic heart lesions. These lesions are a part of a general process and bear no relation to the fibroid.
4. Large tumors, by increasing the work of the heart, and tumors causing pressure on the pelvic circulation may produce hypertrophy and secondary dilatation of the heart.
5. Anæmia from hæmorrhages, infections, and certain degenerations of the tumor may affect the heart secondarily, causing changes such as fatty degeneration, brown atrophy, and cloudy swelling.
6. The majority of cases of fatty degeneration, brown atrophy, cloudy swelling, myocarditis, etc. found in connection with fibroid tumors of the uterus are not caused by the tumor, but by conditions entirely foreign to the tumor.

Krönig: Röntgen Rays, Radium and Mesothorium in the Treatment of Uterine Fibroids and Malignant Tumors. *Am. J. Obst., N. Y.*, 1914, lix, 205. By Surg., Gynec. & Obst.

The technique used in the Freiburg Clinic differs from that usually advocated in that the largest possible doses are used as routine from the beginning of treatment. While at this clinic it is not considered that every case requires immense dosage, yet it is impossible to tell in advance whether a given case will be favorably influenced with small dosage, and again small dosage in the beginning of treatment very frequently causes an increase in the bleeding; the clinic therefore has adopted the large dosage method both because it is more rapid in its effects and because it is free from the danger of increasing the bleeding at the beginning of treatment, a factor of great importance, and the results from this technique have been entirely satisfactory.

Up until this time 350 myoma cases have been treated at the Freiburg Clinic by means of the X-rays and have not in a single instance failed to produce an amenorrhœa. An endeavor has been made to gauge the treatment in young individuals, so as to bring the quantity of blood within the normal, but the attempts have not been satisfactory, since relapses are frequent unless absolute amenorrhœa is produced. The X-rays produce sterility along with the amenorrhœa, so where this result is not desirable, the X-rays are not to be used. The clinic has abandoned the operative treatment of fibroids for the treatment by the röntgen rays except in those occasional cases where it appears that a myomectomy may leave a functioning uterus for a young woman. The argument is that the röntgen rays are just as efficient in their action as the total ablation and is devoid of all danger to life, while an operation carries with it an operative mortality, even if it is small. The artificial menopause symptoms are in general not nearly so pronounced as after operation.

According to the technique employed, an average of 5 to 8 sittings at intervals of 18 days are necessary to perfect a result, so that a cure requires from 3 to 4 months' time. The patient is given two extra treatments after the desired amenorrhœa is produced. With perfected technique skin burns are absolutely avoided so that the treatment carries with it no pain or danger.

The action of radium and mesothorium upon myomata is due to their γ -rays; the other rays have to be filtered out, and since the γ -rays constitute only about one per cent of the ray output of these substances, the dosage necessary to produce results must be very large. The substances may be applied to the abdominal surface of the tumor, or capsules may be placed in the vagina in the vicinity of the tumor, or a capsule may be placed within the uterine cavity. The intra-uterine method is more rapid in its result, but is associated with unpleasant by-effects.

The attempts to treat ovarian tumors with mesothorium and X-rays have not been successful.

Three cases of hypertrophy of the prostate were treated at the clinic in the same manner. In two there has been decrease in the size of the prostates to touch, and some improvement of the bladder symptoms; one case is still under treatment. There was seen great decrease in size of goiters, as the result of the action of mesothorium.

There were treated 254 cases of cancer at the clinic with röntgen rays and radium; this includes all cases, some treated after operation for the prevention of secondary growths, as well as those cases where no operation had been performed. Of 150 cases treated entirely without operation, 140 were treated by the combined use of mesothorium and the röntgen rays, while 10 cases were treated with röntgen rays alone.

Sixty-four cases were treated for the prevention of secondary growth after operations for cancer; of these, 43 were treated almost exclusively with unfiltered rays, while 21 cases were treated partly with filtered and partly with unfiltered rays. While 23 of the 43 cases undoubtedly died of carcinoma, from following the subsequent history of 20 of the 21 cases proof is shown that 19 are undoubtedly free of carcinoma. While sufficient time has not elapsed to speak of them as definitely cured cases, yet the result is so unusual that it will have to be credited to the treatment, that recurrences are not so frequent when filtered rays are used after operation.

In arriving at opinions as to the results of their therapeutic use of radio-active substance in the 140 cases, the clinic divides the cases into (1) those in which the cancer is limited to the primary focus, (2) those cases in which the surrounding tissue has been invaded, and (3) those cases in which not only the neighboring tissues have been invaded but in which there has also been metastases in distant organs.

They have been able to cure no case of metastatic cancer. In those cases where the disease has invaded neighboring tissue they also have been unable to produce a cure, though they have seen some remarkable retrogressions and transitory cessation of growth; but as far as they are able to judge, renewed activity of the disease occurs later. They have had cases where not only retrogression of the growth in the primary focus has occurred, but also in the parametrium and in the neighboring glands, so that carcinoma could no longer be found during an observation period of more than a year.

In cases of the first group, where the cancer is still a local disease and has not advanced beyond the primary focus, the sort of cases ordinarily termed operative, they have been able to cause a complete disappearance of the cancer as far as can be recognized histologically, even after deep incision into the tissues. The case of cure longest observed in the series is one of a large carcinoma of the abdominal wall, that has been under observation for only two years.

N. SPROAT HEANEY.

Giles, A. E.: A Plea for Early Operation in Cases of Uterine Fibroids. *Med. Press & Circ.*, 1914, xcvi, 167.
By Surg., Gynec. & Obst.

Giles advocates the early operation on fibroids because he believes more conservative operations may be performed such as myomectomy; also if the diagnosis is in error the patient's condition may be bettered and perhaps a life saved if the tumor turns out to be malignant; an operation regardless of the age of the patient if the symptoms warrant it.

The author concludes that operations relieve patients from invalidism and that waiting for the menopause is not the rational treatment, as the symptoms do not then subside. EUGENE CARY.

Mapes, C. C.: Infantile Menstruation. *Pediatrics*, 1914, xxvi, 24.
By Surg., Gynec. & Obst.

The author opens his paper with a discussion of the theories of menstruation, which in brief are these:

The uterine congestion theory of Hippocrates; the lunar theory of Aristotle; the mechanical theory of Galen, and the chemical or fermentative theory specified by the Hebraic law. The more recent theories are the nervous automatic control advances by Tait, Raymond, Robinson, and Martin; the internal secretion of the ovary theory as advanced by Gore, and the theory that maturation of the graafian follicle induces ovarian congestion and thus, reflexly, a pelvic congestion results.

The author believes that infantile menstruation owes its origin to precocious maturation of the graafian follicles. Mapes says that this, however, seems fallacious, as menstruation has been noted in women in whom the ovaries have been congenitally absent and in women after both ovaries and tubes have been removed.

The following cases are cited:

1. Seven days after delivery the infant menstruated for 3 days. This was repeated every 28 days, and "there was an unusual amount of milk in the infant's breasts."
2. The menstruation began in a child 4 days after birth and was regular thereafter with "milky fluid oozing from the nipples."
3. A child 3 years old, seen at autopsy, had menstruated every 3 weeks since birth. In this case the ovaries showed signs of ancient and recent ovulation.
4. Menses began in this case at six months of age.
5. In this case menstruation began at fourteen months.

The author cites several other cases that have about the same history and says that several such cases have been observed in Louisville in recent years, two of which have fallen under his own notice.

EUGENE CARY.

Cramer, H.: Radical Operation for Prolapse (Beiträge zur Radikaloperation des Prolapses). *Arch. f. Gynäk.*, 1913, ci, 244.
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author's work is based on 178 radical operations; in 169 cases Wertheim's operation was per-

formed, 9 times the interposition of the uterus was accomplished through the abdomen. Cramer prefers the reversed T-incision.

As the interposed uterus, if not covered with mucous membrane, may pull out the anterior vaginal wall in a funnel-shape, Cramer, like Schauta, recommends that it be completely covered over with vaginal mucous membrane. The uterus is always fixed with a series of interrupted sutures from the fundus to the cervix, and the vagina tamponed after the operation. The abdominal cavity is accurately closed by suturing the vesico-uterine fold to the posterior cervical wall.

In many cases, ligation of the bladder is necessary. In one case, in which anterior and posterior colporrhaphy had been performed 6 years before the bladder ruptured, the edges could not be brought together and sutured on account of the scar; after the removal of the permanent catheter on the twelfth day the bladder was perfectly continent. If there is incontinence of urine as well as prolapse, in addition to replacing the bladder, the author ligates the neck of the bladder and urethra; the cause of the incontinence he thinks is a tearing of the urethra and bladder from their supporting tissues.

In order to narrow the vault of the vagina which is frequently very flaccid, he recommends the resection from the reversed T-incision of an equilateral triangle, with its apex at the urethral prominence and its base at the transverse incision in the cervix. In this way the ligaments of the uterus can be reached and tightened by transverse sutures.

In the author's opinion, exploratory curettage should precede the operation for prolapse. He prefers excision of the mucous membrane to cauterization. In myoma he uses the wedge incision. If necessary, the cervix is amputated after the interposition and the closure of the anterior colporrhaphy wound. The crura of the levator are united in the median direction by 4 to 6 buried sutures. Two of the cases died; one was complicated by a ruptured tubal pregnancy and died of peritonitis. In the second case the patient died of embolus of the lung. Two cases, who had to have laparotomy performed afterwards on account of ileus, recovered. Among 140 cases examined afterwards, there were 4 recurrences, giving 2.9 per cent recurrences and 97.1 per cent permanent recoveries. P. MEYER.

Krauze, L.: Operative Treatment of Prolapse of the Pelvis (Zur operativen Behandlung des Mastdarmvorfalles). *Przegl. chir. i ginek.*, 1913, ix, 156. By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author gives a review of the present views as to the etiology of the condition and a criticism of the different methods of operation. Resection is a severe operation with 11 per cent mortality. The operation scar may give rise secondarily either to stenosis, or because of rupture, to a recurrence. Colopexy through the anterior abdominal wall gives 60 per cent of recurrences and may lead to the

formation of dangerous bands of adhesion. Operations for the repair of the pelvic floor have not been very successful.

The author prefers Rehn-Delorme's method of incising the mucous membrane of the prolapsed section in a cylindrical form and uniting the edges of the defect by a series of sutures. He has operated on 9 cases by this method and gives the case histories. The severe hæmorrhage which would otherwise take place is avoided by the elastic ligation of the prolapse at the anus. The oldest patient was 68, the youngest 22. Most of the cases were operated on under local anæsthesia; the results were good and there was recurrence in only one case after a year. In two cases, in elderly women, a slight prolapse after a few weeks was remedied by a plastic operation on the floor of the pelvis. In simple, mild cases the method is excellent and gives few recurrences. In severe cases it may be combined with a plastic operation on the floor of the pelvis; the second operation should be performed a few weeks after the first.

WERTHEIM.

Harris, S. H.: Ventrofixation of the Uterus; with a Report of Two Cases of Dystocia. *Australas. M. Gaz.*, 1914, xxxv, 61. By Surg., Gynec. & Obst.

The author gives the teachings of various authorities on this subject and reports two cases from his experience. The first patient, aged 33, III-para, was seen at term. A ventrofixation had resulted from an operation two years before. Twelve months after this she had been delivered of a dead child "feet first," after a difficult labor. The author found a shoulder presentation, the cervix drawn high up and fully dilated. The child was delivered by podalic version.

The second patient, a primipara, aged 19, had a Gilliam operation followed by some infection which resulted in a ventrofixation. There was a shoulder presentation and a partial placenta prævia. External version was performed and a leg brought down. The child was lost, but the mother made a good recovery.

C. H. DAVIS.

Mamourian, M.: The Radical Cure of Procidencia Uteri in Elderly Women. *Brit. M. J.*, 1914, i, 367. By Surg., Gynec. & Obst.

The author believes that a radical cure for procidencia in elderly women can be done entirely by the vaginal route and with this in mind he has devised an operation which he has been using with complete success.

To correct the condition of prolapsus the following conditions must be complied with: (1) Reduction of the weight of the uterus proper; (2) removal of excessive cervical substance; (3) anteflexion of the uterus; (4) narrowing of the vaginal canal; (5) lengthening of the posterior vaginal wall; (6) restoration of the parallelism of the vagina to the conjugate of the pelvis; (7) restoration of the continuity of the cellular tissue around the new vagina; (8) repair of the pelvic diaphragm; (9) repair of the

perineal body; (10) widening of the perineum and lessening the size of the pudendæ orifice.

The operative procedure is as follows: Curettage, amputation of the cervix, and anterior colporrhaphy, followed by perineorrhaphy.

In the anterior colporrhaphy after the mucous flap is removed and the cervico-vagino-vesical cellular tissue is exposed, two anteflexing sutures are passed into the cervical end of the wound transfixing the mucous membrane edges. These pass upwards to the supravaginal segment of the cervix and out through the cellular tissue under the bladder. This procedure anteflexes the uterus; the parametric stitches are then taken and the mucous membrane closed. Next, the posterior colporrhaphy is done in which the vaginal outlet is closed so as to admit the thumb only, the posterior wall being closed with the Lambert stitch. The perineum is filled in by the "segmental" stitching, interrupted sutures being used. The skin is closed by Michel clips.

The author has carried out the above procedure twenty times without a mortality or a recurrence.

EUGENE CARY.

Van Teutem, E. A.: The Causes of Retroflexion (Die Ursachen der Retroflexion). *Nederl. Mand-schr. v. verlosk. en vrouwenz.*, 1913, ii, 549.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author based his study on 1,438 patients of the Leiden gynecological clinic. The frequency was 16.6 per cent. In 200 patients on the medical side there were 5.5 per cent of retroflexions and in 951 parturient women there were also 5.5 per cent retroflexions, from which he draws the conclusion that birth has no effect in producing retroflexion.

After a thorough discussion of the literature, the author comes to the conclusion that the uterus is held in anteflexion only by the tonus of its tissues. Retroflexion is produced by: (1) Loss of tone from asthenia, infantilism, tuberculosis, anæmia, chlorosis, exhausting diseases, senility, and post-mortem relaxation; (2) pressure on the anterior wall from tumors or increase of intra-abdominal pressure; and (3) traction on the posterior wall by tumors or adhesions. The first of these causes is the most frequent and most important. Congenital retroflexion is very rare. Retroflexion is not influenced by delivery.

C. H. STRATZ.

Mendes De Leon, M. A.: Alexander-Adams Operation (Zur Alexander-Adams Operation). *Monat-schr. f. Geburtsh. u. Gynäk.*, 1913, xxxviii, 536.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In retroflexion of the uterus, if the position is corrected an improvement in the subjective and objective symptoms is obtained in the majority of cases. This is especially true of mobile retroflexion, in which there must be unhindered freedom of motion of the whole organ, as well as between the upper and lower parts of it. Pessaries, which were formerly used to correct the position, cannot be

used in virgins with small cervixes, in cases where the pelvic musculature is injured, or if the mucous membrane is inflamed and sensitive; at any rate, after they are removed the condition generally recurs.

No operation is justified that does not preserve the physiological mobility of the uterus. This condition is best fulfilled by shortening the round ligaments by an Alexander-Adams operation. After the operation a pessary, generally Hodges', is worn for 4 or 5 weeks, and the patient can get up on the tenth or twelfth day. If there is also an inguinal hernia the hernial sac is freed from the ligament and removed by Bassini's method.

Among 5,000 patients since 1902, the author has had 1,360 cases of retroflexion of the uterus. Two hundred and sixty of these were immovable; of the remaining 1,100, 733 were treated non-surgically, 235 replaced by pessaries, and 132 operated on by Alexander-Adams method. There were no deaths; once the bladder was injured and sutured without any bad results; once there was pneumonia; the results were generally satisfactory. He examined 56 of the patients later, and found three recurrences which the patients were not aware of. In one of these patients there had been bilateral inguinal hernia and severe enteroptosis. He had uniformly favorable reports of most of the other patients, either from themselves or through their physicians; 15 of the patients — 4 primiparæ and 11 multiparæ — became pregnant without a recurrence.

WOLFF.

Sigwart, W.: Avoiding Peritonitis in the Operative Treatment of Rupture of the Uterus and Perforating Wounds of the Uterus (Die Ausschaltung der Peritonitisgefahr bei der operativen Behandlung der Uterusruptur und der perforierenden Uterusverletzungen). *Arch. f. Gynäk.*, 1913, c, 196.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The rupture of the uterus is the most serious and dangerous complication of labor; accompanying it there are two dangers that threaten life: hæmorrhage and peritonitis. To prevent these two contingencies is the aim of medical treatment, but of the two, peritonitis is by far more difficult to avoid.

Rupture of the uterus should be treated in the hospital, and Momburg's method will be found a valuable aid in transporting patients. If the child is in the abdominal cavity delivery by the natural route is not always necessary, as bleeding is often slight on account of contraction of the uterus. If there are signs of severe internal hæmorrhage, the child should be immediately extracted through the rupture and Momburg's tube applied afterward. If the child has not escaped from the uterus, or only partially so, delivery should be performed by the natural route. Tampon and drainage are unsafe methods of stopping the hæmorrhage, operation being the only safe method; in incomplete rupture without severe laceration of the tissues this may be vaginal. Suture of the rupture is

seldom successful, therefore vaginal total extirpation is to be preferred. If there are hæmatoma in the parametrium, laparotomy is to be preferred even in incomplete rupture; the injured parametrium must be removed and the clots cleaned out.

In complete rupture laparotomy is indicated. Suture of the wound should be undertaken only if the laceration of the tissues is slight; otherwise, total extirpation is to be preferred. The surest means of avoiding infection consists in absolutely closing off the pelvic wounds from the abdominal cavity. Therefore, in addition to the primary closing suture of the peritoneum, a second continuous suture similar to Lambert's serous suture should be used. Sigwart describes twelve cases of rupture that were treated in this way: three of the women died of loss of blood; the remaining nine recovered without any severe peritoneal symptoms. Sigwart then discusses penetrating wounds of the uterus. Here too he recommends laparotomy with the aim of cleansing the abdominal cavity, but in these cases the uterus does not need to be removed. Careful covering over of the wounds with peritoneum is important and the author recommends that the site of perforation be left outside the peritoneum.

GUGGISBERG.

Breitstein, L. I.: Rupture of the Uterus Following Cæsarean Section. *J. Am. M. Ass.*, 1914, lxii, 689. By Surg., Gynec. & Obst.

This case is interesting from the fact that the patient, who was 17 years of age, had a normal pelvis and cæsarian section was done because of a large hæmatoma which blocked the pelvic canal. The third day following operation the temperature rose to 38.8° C. and on the fifth day there was a profuse purulent discharge from the vagina. An abdominal stitch abscess developed but the temperature gradually fell to normal on the fourteenth day. About two years later she became pregnant and was delivered spontaneously through the vaginal route—the puerperium was not complicated. The third and last pregnancy occurred about eighteen months later.

In the eighth month of the last pregnancy she was admitted to the hospital because she complained of irregular pains, not strong in character. Her abdomen was distended and she looked as if she was at term; her temperature was 37.6° C. pulse 100, and respiration 24; no nausea, evidence of hæmorrhage, or shock was present. The abdominal examination was not satisfactory. The position of the foetus could not be made out nor could the foetal heart-tones be heard. Life was felt until the day before the patient's entrance into the hospital; her bowels moved after she had been in the hospital twenty-four hours and she felt more comfortable. She sat up in a chair and when she walked about the room her gait was peculiar; she would bend over and hold the lower part of the abdomen with both hands.

A careful examination made at this time revealed

the occipito-anterior lævus. The head was freely movable but no foetal heart-tones could be heard. The vagina was roomy and free from blood; the cervical canal was not obliterated; the cervix was hard and thick. On introducing the finger into the cervix and lower uterine segment it was found empty. The patient was immediately operated upon.

On operation the intact bag of water containing the foetus was seen free in the abdominal cavity. The membranes were ruptured and the dead baby delivered. The placenta was found lying on the external anterior surface of the uterus. The uterus was fairly well contracted and the rupture was seen to be confined to the old scar from the cæsarian section. There was no free blood in the abdominal cavity, but a black clot was removed from the left broad ligament. A supravaginal hysterectomy was performed, leaving the left ovary behind. The abdomen was closed with a drain in its lower portion. The post-operative history was uneventful.

After briefly reviewing the case histories from the literature, the author comes to the following conclusions:

1. A cæsareanized woman who gives a history of an infection with purulent discharge from the vagina in the puerperium is a good candidate for rupture of the uterus in one of her subsequent pregnancies.

2. The mere fact that a cæsareanized woman has delivered herself spontaneously is no reason for believing that she is free from the danger of rupture of the uterus in her future pregnancies.

3. Rupture generally takes place in a scar resulting from improper wound-healing in the presence of infection.

4. The implantation of the placenta on the site of the scar may so weaken the uterine tissue that it may rupture under the strain of labor.

5. Cæsarian section should be limited to those cases in which it is strictly necessary.

6. A cæsareanized woman should be in the hospital during the last month of her subsequent pregnancies so as to be under constant medical supervision.

EDWARD L. CORNELL.

Nebesky, O.: Treatment of Complete Rupture of the Uterus (Beitrag zur Therapie der kompletten Uterusruptur). *Monatschr. f. Geburtsh. u. Gynäk.*, 1913, xxxviii, 417.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author reports four cases of rupture of the uterus which he has observed at the Innsbruck Clinic since 1880. The first two cases were treated conservatively. There were no prodromal symptoms of the rupture. Delivery was accomplished by the natural route, there was no hæmorrhage, and neither the foetus nor placenta were extruded into the abdominal cavity; in one case the peritoneum was intact, and yet both cases died of peritonitis. The third and fourth cases were operated on suc-

cessfully. The uterus was emptied through the rupture, though in these cases neither the fetus nor placenta was in the abdominal cavity, and there was no serious degree of hæmorrhage. In the fourth case there were no signs of distension; the rupture could be diagnosed only by the sudden appearance of pain, difficulty in breathing, and the free mobility of the foetal head.

From his own cases and a study of the literature Nebesky concludes that in every complete rupture of the uterus immediate operation is indicated. Tamponing is only to be regarded as a temporary means of stopping hæmorrhage, or to be used in cases where operation for some reason cannot be performed. The choice of the operation must depend on the case. He warns against simply suturing the rupture, on account of technical difficulties and danger of infection and recurrence. Whether total extirpation or supravaginal amputation is the operation of choice will depend on the extent and location of the rupture, but both should be performed by the abdominal route. The question of drainage will depend on the operator but Nebesky recommends drainage of the peritoneum into the true pelvis. Only by immediate operation in all cases can the present mortality of 30 per cent be reduced.

BLEEK.

ADNEXAL AND PERIUTERINE CONDITIONS

Ekler, R.: Ovarian and Parovarian Tumors (Über Ovarial- und Parovarialtumoren). *Monatschr. f. Geburtsh. u. Gynäk.*, 1913, xxxviii, 523.
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

A collection of the material from the Vienna Rothschild Hospital for the past 6 years, includes 211 ovarian tumors, 45 of which were malignant. There is nothing particularly new in their symptomatology and diagnosis. There were mistaken diagnoses in 3 cases of tumor of the kidney, 1 of the mesentery, 2 of the stomach, and 1 of the pancreas. The indication is to remove every ovarian tumor because of the danger of torsion of the pedicle and of malignant degeneration, either by laparotomy, which was performed through a median incision 158 times and through a Pfannenstiel's incision 38 times, or by colpocœliotomy, which was performed 15 times.

The operation of choice in benign tumors is ovariectomy; in malignant ones the radical operation, generally without drainage. In benign cases the mortality was 1.2 per cent, in malignant ones the primary mortality was 8.9 per cent. Of the 211 tumors, 32 were intraligamentous; 179 had pedicles, and of these, 47 showed torsion of the pedicle—the most extreme case of torsion was 5' x 360'. Twice there was rupture and three times suppuration; in 9 cases, operation was performed during pregnancy; 60 cases were simple serous cyst; 42 serous cystadenoma; 46 dermoid cysts, 42 carcinoma; and 3 sarcoma. In 11 cases the new-growth originated from the parovarium.

Moos.

Djedoff, W. P.: Bilateral Ovarian Cyst, Complicated by a Right-Sided Extra-Uterine Pregnancy: Operation; Recovery; the Fertilization of the Ovum in the Graafian Follicle of the Diseased Ovary; Causes of Extra-Uterine Pregnancy (Doppelseitige Eierstockskystome, kompliziert durch eine rechtseitige Tubergravidität Operation. Genesung. Die Befruchtung des eies im Graafischen Follikel des kranken Eierstocks. Ursache der Extrauterinigravidität). *Vrach. Gaz.*, 1913, xx, 1524.
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author thinks that disease of the ovary, from which the impregnated ovum comes, is the chief factor in the origin of extra-uterine pregnancy. Probably the ovum is impregnated in the graafian follicle, which does not open far enough to let the impregnated ovum out; but afterwards the follicle cannot resist the pressure of the growing ovum, and ruptures further so that the impregnated egg gets into the ampulla of the tube, but cannot pass through the lumen and in this way extra-uterine pregnancy arises. As an evidence of this the author cites the comparative frequency of pregnancy in the ampulla, and the occurrence of ovarian pregnancy. As an illustration he cites a case that he operated on, of pregnancy in the ampulla of the tube with cysts of both ovaries.

BRAUDE.

Barr, A. S.: A Case of Right Inguinal Hernia of Ovary and Tube. *J. Am. M. Ass.*, 1914, lxii, 451.
By Surg., Gynec. & Obst.

The author reports a case of a girl 12 years of age who had been afflicted with a hernia for some years and had worn a truss. Except for the truss she had not been bothered until two days before operation, while the truss was off, she coughed and a swelling appeared in the hernia. At operation the sac was found to contain the right ovary and tube, but no bowel or omentum. The ovary and tube were replaced in the abdomen and the wound closed in layers as usual.

EDWARD L. CORNELL.

Eustace, A. B., and McNealy, R. W.: Case of Strangulated Tubo-Ovarian Hernia in an Infant. *J. Am. M. Ass.* 1914, x, 772.

By Surg., Gynec. & Obst.

After a reference to Heineck's compilation of 80 cases of undoubted tubo-ovarian hernia, including all those found in English and foreign literature, the fact is noted that 35 of these cases occurred in infants under one year of age; all were inguinal, mostly irreducible and more or less strangulated.

The case of a colored infant, 6 months old, is reported. The mother could not reduce a previously readily reducible hernia which had been present since birth and which had descended after a coughing spell. After 3 days' treatment by hot applications and "drops" by neighborhood physicians the hernia became larger and the symptoms aggravated. When the child was examined by the writers, operation was decided upon. The usual inguinal incision was made and a black congested mass surrounded by a bloody fluid found in the sac which pathological report confirmed as a gangrenous ovary and tube.

After excision of the mass Andrews' imbrication was used and skin sutured without drainage. Recovery was uneventful, confirming the excellent prognosis obtaining in tubo-ovarian as contrasted with intestinal strangulations. EUGENE J. O'NEILL.

Fraenkel, M.: Dissolution of Parametric Adhesions by Röntgen Rays (Lösung parametritischer Verwachsungen durch Röntgenstrahlen). *Zentralbl. f. Gynäk.*, 1913, xxxvii, 1570.
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In 75 per cent of all cases where there had been adhesions of the genital organs, Fraenkel found they had improved or entirely disappeared after röntgen treatment. Firmly fixed uteri became movable, thick bands in the parametrium softer and less prominent, and bands in Douglas' pouch could no longer be felt when placed under tension. In one case a firmly adherent ovarian cyst became movable. He explains this retrogression of adhesions under röntgen treatment as being partly mechanical, the myomata as they decrease in size loosening the adhesions by traction. In other cases it must be admitted that there is a reduction of the adhesions by the direct action of the röntgen rays. This was particularly true in adherent uteri and peritoneal tuberculosis, and, in some cases, the retrogression of the adhesions was confirmed on laparotomy.

FRANZ COHN.

EXTERNAL GENITALIA

Küster, H.: The So-Called Cysts of the Vagina (Beitrag zur Kenntnis der sogenannten Scheiden-cysten). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxiv, 611.
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

In a case of vaginal cyst in a 26-year-old woman, the cyst, the size of a goose egg lay in the posterior vaginal vault under the mucous membrane in the rectovaginal septum. Close examination showed one large and two small cavities; the wall consisted of a double layer of non-striated muscle, one longitudinal and one circular, and an epithelial layer without glands; the wall was 3 to 4 mm. thick. The situation of the cyst under the vaginal wall as well as the structure of the tissue pointed to a congenital origin. The author came to the conclusion that it originated from the wolffian duct, which had not only persisted, but developed into a structure similar to the vas deferens, with secondary cystic dilatation.

RITTERSHAUS.

Lerda, G.: Leiomyoma of the Urethro-Vaginal Septum (Leiomyoma septi urethro-vaginalis). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxiv, 846.
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The patient was a 49-year-old healthy multipara, whose last child had been born 9 years before. For 9 months a tumor had been developing between the labia majora. It was as large as a mandarin, looked like a cystocele, and had no connection with the uterus or other organs. It was encapsulated

and was easily removed, followed by the patient's recovery in 8 days. It was found to be made up of fibrous connective tissue with numerous elastic fibers. Connective-tissue septa penetrated the tumor and between them were bundles of non-striated muscle fibers; there was no gland formation. About 260 such tumors have been reported.

He discusses the reasons why fibromata of the vagina generally appear in the anterior wall. Most modern authors accept the possibility of such tumors originating from wolffian remnants. He argues with Raimondi the possibility of fibromata of the urethra developing in the vagina, discusses the diagnostic signs, and concludes that his case was a dermoid tumor originating from Müller's duct.

MORALLER.

Sinclair, J. F.: Investigations in Vulvovaginitis. *Arch. Pediatrics*, 1914, xxxi, 29.

By Surg., Gynec. & Obst.

The unreliability of bacteriological examinations of smears and the misleading but characteristic tendency of vulvovaginitis towards periods of latency led the author to seek for improved methods of vaginal examination in children. Following the suggestions of Leopold and Rubin, the electric-lighted female urethroscope was used in the routine examination of eighty-three infants, and the results tabulated in two groups: (1) positive cases, (2) highly suspicious cases.

Vulvar, vaginal, and bichloride smears were made and the clinical conditions of the cervix and vagina were ascertained by endoscopical inspection, and carefully recorded along with the clinical appearances of the vulva.

In but one of the reported cases in which smears were positively gonorrhœal at some time during the course of the disease were the endoscopical findings normal. In all others of this group there were hæmorrhagic spots, hyperæmia, or free pus on or about the cervix. In the highly suspicious cases in which smears were, of course, not confirmatory of gonorrhœa the endoscopical appearances were again normal in but one case.

A third table in the report gives the results of the complement-fixation test which was positive in 50 per cent of the ten cases thus examined. The test proved negative in cases selected from Group 2.

As a result of these investigations the author recommends the endoscope as a most valuable aid in the diagnosis of doubtful and suspicious cases.

CHRISTIAN D. HAUCH.

Smith, G. G.: The Treatment of Gonococcus Vulvovaginitis; with Further Observations on the Value of the Complement-Fixation Test in Management of This Disease. *Am. J. Dis. Children*, 1914, vii, 169.

By Surg., Gynec. & Obst.

The description of a practicable method of treatment of specific vulvovaginitis in little girls, together with a discussion of the question as to the

real cure of this affection and its relation to the complement-fixation test, comprise the substance of this article. The heralded efficacy of gonococcus vaccine in children is much doubted as a dependable therapy.

The method employed by the author consists in a preliminary irrigation of the vaginal parts with a solution of either sterile water, 2 per cent boric acid, soda bicarbonate a teaspoonful to a quart, which is especially soothing, or potassium permanganate 1 to 8,000, especially when there is a tendency to chronicity. If the inflammation is very acute the local treatment is deferred a few days.

The child is placed on a table back down, hips elevated, and the solution (slightly warmed) allowed to run into the vagina through a soft rubber French catheter, size 12 or 14, which has been well lubricated and inserted carefully through the hymen. Immediately following irrigation, one or two drachms of a silver salt, usually argyrol 10 per cent, are injected through the catheter by a hand syringe. The catheter is withdrawn and the thighs kept in close approximation for fifteen minutes. In the more chronic cases the vaginal parts are gently swabbed with tincture of iodine or Perrin's solution. Urethritis, which is less often a complication than in the adult, is treated by daily instillation of 1 or 2 ccm. of 5 per cent protargol.

The treatment, given preferably twice daily, should cover at least a month, but the patient should be seen at intervals thereafter. At least three months should elapse after cessation of the discharge before the case can be pronounced cured. The author believes that those discharges that reappear after a long quiescence are due either to reinfection, often from the same source, or are non-specific and arise from masturbation, extension from dermatitis, or infections from other organisms for which gonorrhoea leaves a predisposition. Long and persistent treatment will insure total destruction of gonococci in the great majority of cases notwithstanding the pessimistic views of such authorities as Edith Spalding, who reports recurrence in 22 out of 26 cases.

Discussing the complement-fixation test, a weakly positive blood is said to be very often present when there has been neither clinical nor microscopical evidence of infection for a long period. His hypothesis is that there is a slight tendency for gonococcal antigen to combine with antibodies due to allied microorganisms. Cases are reported that were under observation several years and which bear out this point.

EUGENE J. O'NEILL.

Tweedy, E. H.: Lacerations of the Perineum and Their Treatment. *Med. Press. & Circ.*, 1914, xcvi, 195. By Surg., Gynec. & Obst.

This subject has received but scant attention of late years, and the general belief is that the last word has been said concerning it. Yet even to-day there exists a vast difference of opinion as regards the details of treatment. It was formerly held

that lacerations of the perineum occurred as a mere splitting through the median raphe and their importance was gauged by their length. The old classification of three degrees of laceration is still reproduced in textbooks, and remains a dogma which has long since outlived its meaning.

The classical symptoms associated with partial rupture of the perineum are not dependent on the extent of the median rupture, but rather on the severity of the lesion in the levator ani muscles. The perineum may rupture in one of three ways: (1) The rupture might occur through its center. (2) One or both lateral supports might give way. (3) These lateral supports, without rupture, might be dragged from their attachments. The last is the common way. The muscle fibers are seldom snapped asunder; in the majority of cases they are torn from their insertion in the perineum. Such a catastrophe leaves the skin and superficial fascia intact. It is the rule, rather than the exception, to see vigorous and misdirected efforts made to support the perineum at a period long after its tearing has actually occurred. The intimate connection between the muscle and mucous membrane causes both structures to give way together, and such tearing is almost invariably followed by a slight flow of blood. It should never be mistaken for the "show." The retraction of the muscles can be felt by placing a finger in the vulva during a pain. The thinly stretched-out perineal skin rarely escapes uninjured from the subsequent processes of labor.

The appearance of the laceration and the best method of examining it is discussed. In the repair, the author states that the most perfect anatomical reunion will not occur unless the upper and lower surfaces can be united throughout their widest extent and that any closure of the vaginal mucous membrane preliminary to deep suturing must diminish this area, and prevent approximation of important muscle-bundles. The employment of separate catgut sutures for the mucous membrane is not advised because of the liability of suture infection. Furthermore, the muscle-fibers which lie to the outer borders of these mucous membrane rents are not placed in a position anatomically correct when fastened to the side of the mucous membrane tongue.

It is the author's custom to suture the perineum immediately after the cord is cut and before the fingers employed for exploring the wound have been withdrawn. If stout unchromicized catgut is employed, the patient need never know she has been torn as she is still sufficiently under the anæsthetic to be unconscious. The author uses a large needle 3 inches long, semi-curved, which is held without a needle-holder. A long suture is used, the end of which is wrapped around the little finger to keep it clean. The point is entered at the skin edge of the posterior extremity of the wound, and is then rotated so as to make its concave surface look toward the floor. This enables it to sink deeply into the lateral tissues, after which it is again rotated and pushed on until it lies beneath the tip of the index finger,

the one which holds back the base of the tongue of mucous membrane. It now penetrates deeply into the upper raw surface, and is brought out through the skin at a point which corresponds to its entrance. A second suture is placed in position about half an inch in front of the first. It pierces the apex of the tongue before crossing to the upper surface. Other stitches may be placed in position similarly, and each will enfold a smaller amount of tissue than its predecessor. All the sutures lie parallel to the bowel.

The author prefers to do secondary operations two months after labor. Before that time the parts are soft and vascular, and have not completed their full involution. A slight modification of the Lawson-Tait operation is used. No sharp dissection, however, is done. All the parts are separated by gauze which makes the operation practically bloodless.

The repair of complete laceration of the perineum is discussed and similar methods recommended.

EDWARD L. CORNELL.

MISCELLANEOUS

Fellner, O. O.: Experimental Study of the Effect of Tissue Extracts from the Placenta and Female Sexual Organs on the Genital Organs (Experimentelle Untersuchungen über die Wirkung von Gewebsextrakten aus der Placenta und den weiblichen Sexualorganen auf das Genitale). *Arch. f. Gynäk.*, 1913, c, 641.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author reports a series of experiments performed for the purpose of studying the effect of long-continued injections of extracts of the placenta, foetal membranes, and female genital organs on the sexual system. Virgin rabbits and guinea pigs were used for the experiments and the conclusions were as follows: (1) There are substances in the placenta, the foetal membranes, and ovaries which contain corpora lutea, that, when injected subcutaneously or intraperitoneally, cause growth of the mammary glands; increase in the size of the uterus; symptoms of heat and pregnancy in the mucous membrane of the uterus, enlargement and symptoms of pregnancy in the vagina; parenchymatous nephritis; and a failure of shaved hair to grow. (2) Secretion of milk was not observed. (3) The substance decomposes in salt solution, is soluble in alcohol, ether and acetone, and may be a lipid. (4) Aqueous alcohol-ether extracts of the placenta caused strong, long-continued contractions in the uterus removed from a living guinea pig.

B. WOLFF.

Schröder, R.: Time Relation between Ovulation and Menstruation; also a Study of the Corpus Luteum (Über die zeitlichen Beziehungen der Ovulation und Menstruation; Zugleich ein Beitrag zur Corpus-luteum-Genese). *Arch. f. Gynäk.*, 1913, ci, 1.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author reports comparative experiments on the endometrium and corpus luteum of 100 cases,

of which 69 had menstruated regularly and 11 irregularly, although they still showed conformity with the corpus luteum cycle. Bielschowsky-Hörmann's method of staining was used for the ovary. The condition of the corpus luteum and endometrium at the different periods after menstruation was as follows:

1. On the fifteenth to twentieth day after the beginning of menstruation, the endometrium showed the characteristics of the middle or end of the interval. The corpus luteum was going through the first stages of its development. There were small granulose cells gradually increasing in size, with a gradual increase in the folding of the layer, with abundant red blood-cells between; beginning unraveling of the limiting fibrous membrane and an arrangement of the finest fibrils in a radial direction; slight beginning internal boundary; first beginnings of capillary formation; large internal theca-cells, gradually growing smaller; beginning formation of theca-cells in characteristic, concentrically arranged fields.

2. On the eighteenth to twenty-fifth day, the endometrium showed the beginning to the middle of the premenstrual period. There was mature corpus luteum; deep, large-celled, very much folded granulosa, with fine fibrils and capillaries, mostly running in a radial direction; thin but clearly defined internal connective-tissue boundary; clearly marked, small-celled peripheral theca interna.

3. On the twenty-fourth to twenty-eighth day, the endometrium showed the end of premenstruum, anatomical menstruation; the corpus luteum fully developed and organized; granulosa similar to that in the second period, but more abundant radial and transverse fibrils, surrounding each cell with a fine net-work, abundant transverse capillary anastomoses; very well developed internal connective-tissue boundary; well marked fields of small theca-cells.

4. On the first to fourteenth day, the endometrium is in the condition of the post-menstrual interval: corpus luteum in a condition of retrogression; granulose cells shriveled, bursted by the continuously increasing growth of fibrils; the internal connective-tissue layer had become thicker and nuclear organization had taken place from it; the theca interna was very marked in the peripheral fields, its cells clear and well developed.

From the foregoing, the conclusion may be drawn that the ripe follicle ruptures the fourteenth to sixteenth day from the beginning of menstrual bleeding and that the rapidly developing corpus luteum normally matures at the time of the premenstrual swelling of the mucous membrane and is the cause of this change. The fertilization of the ovum must date from the last complete menstrual period.

Schröder says that he undertook his investigations before Meyer and reached the same results independently of him.

HOFSTÄTTER.

Hauser, H.: Use of Gonococcus Vaccine in Gynecology for Treatment and Differential Diagnosis (Die differential-diagnostische und therapeutische Bedeutung der Gonokokkenvaccine in der Gynäkologie). *Arch. f. Gynäk.*, 1913, c, 305.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author gives a review of the history of vaccination. For diagnosis, he used subcutaneous injections, in varying doses, of Reiter's polyvalent gonococcus vaccine, of which 1 ccm. contains 70 to 100 million gonococci for local and general infections. Intravenous injection is not considered advisable.

The results were listed by examining for gonococci, afterward, and in many cases from histological specimens. If the local reaction persists for more than 24 hours it indicates that too strong a dose has been given and this condition is accompanied by an increase in the size of the tumors. Of 95 cases examined; 21, that were certainly gonorrhoeal, reacted positively; while 9, that were surely non-gonorrhoeal, reacted negatively.

Among the positive cases, there were 6 acute cases, without demonstrable involvement of the internal genitalia but with a severe cystitis, which may be regarded as a circumscribed focus. The remaining cases examined for differential diagnosis from non-specific inflammations of the adnexa, tubal pregnancy, tuberculous tumors of the adnexa, small cystomata, perityphilitis, and exudate in the parametrium, gave 4.2 per cent of absolute failures and 5.3 per cent of questionable results. Vaccination for diagnosis, therefore, is very useful but not absolutely reliable, as negative results prove nothing and reaction may be prevented by old inactive foci, by mixed infection, or by too small dosage.

Schridde maintains that gonorrhoeal salpingitis can be diagnosed absolutely, from the histological picture. Hauser found that in 22 cases that were certainly gonorrhoeal, the picture described by Schridde appeared, but that in 7 that were very probably non-gonorrhoeal and reacted negatively, it was also present.

Twenty-three cases were treated with vaccine, beginning — if the patient was not in a negative phase, caused by auto-inoculation — with 0.3 ccm. Reiter's vaccine, containing three hundred million gonococci. Three to eight injections were given increasing the dose to 0.8 ccm. and, in one case, to 1.0 ccm., the maximum dose.

Injections were not given during the menses or while there was fever, and a rise of temperature was avoided, if possible. In almost all cases there was improvement of subjective symptoms and general health. Of 18 tumors of the adnexa, 5 were cured and 6 improved. Old tumors gave no results; recent ones, even cases of hydrosalpinx as large as an apple, gave surprisingly good results. In 3 cases of cervical gonorrhoea; 1 of cystitis; and 1 of inflammation of Bartholin's glands, there were good results; and in 1 case of arthritis there was rapid and complete recovery. Connective tissue changes and adhesions were not affected. As vaccine treatment

is not absolutely without danger it should be kept under careful observation, with the patient, if possible, at rest. BISCHOFF.

Horwitz, R. E., and Obolensky, N. A.: Giant Tumors of the Female Genitalia (Zur Kasuistik der Riesengeschwülste der weiblichen Geschlechtssphäre). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, xxviii, 1528.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The first case was that of a 43-year-old V-para whose abdomen had been increasing in size for 4 years, causing difficulty in breathing. A diagnosis was made of a combination of myoma of the uterus with ovarian cyst. Laparotomy showed a hard tumor of the posterior wall of the cervix, located outside the peritoneum. There were adhesions with the sigmoid flexure and the left ureter which had been transformed into a hydro-ureter by pressure from the tumor. Healing was by first intention. The weight of the tumor was 17 kg. Microscopically the tumor consisted chiefly of connective tissue; the lymph-spaces were dilated; it was found to be a retrocervical fibroid of the uterus. A peculiarity of the case was the extraperitoneal situation of the tumor, which was due to its development from the posterior wall of the cervix. To differentiate it from ovarian cyst was difficult.

The second case was a 38-year-old VI-para whose last delivery had been 6 years before; after that she had had pain in the abdomen, which had increased in size, the growth being very rapid for two years past. The diagnosis was ovarian cyst. Laparotomy was done and a cystic subserous myoma of the uterus was found and there were adhesions with the omentum. The recovery was uneventful. The tumor weighed 22 pounds.

The third case was a 30-year-old IV-para whose last delivery had taken place 6 weeks before. Soon after delivery the abdomen increased in size and at examination was the size of a ten months' pregnancy. She had difficulty in breathing and was troubled with constipation. Operation showed adhesions with liver and omentum; 22,600 gr. colloidal fluid was emptied on the puncture. An ovarian cyst was found on the left side. The recovery was uneventful.

The author comes to the following conclusions: (1) The diagnosis in giant tumors generally has to be made on operation. (2) Laparotomy is to be preferred to vaginal operation. (3) Careful covering with peritoneum should be done to avoid ileus and sepsis. GINSBURG.

Steffeck, P.: Operation for Incontinence of Urine and Severe Genital Prolapse (Beitrag zur Operation der Incontinentia urinæ und der grösseren Genitalprolapse). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxv, 221.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Since incontinence of urine is not permanently cured either by anterior colporrhaphy, or by narrow-

ing or rotation of the urethra, Steffek proposes a new operation for cases which are not affected by massage or pessary treatment. He makes a concave incision anteriorly in the anterior vaginal wall; completely frees the bladder from the uterus and vagina; splits the anterior vaginal wall almost to the urethral opening; opens the peritoneum; brings forward the uterus; ligates both tubes with silk-sutures; replaces half the uterus in the abdominal cavity; inserts a purse-string suture in the bladder; fastens the bladder peritoneum to the posterior surface of the fundus of the uterus at the top; fastens this in the upper angles of the vaginal wound; and closes the first vaginal wound. The bladder is thus fixed, not behind the uterus, as in the Schauta-Wertheim operation, but above it.

The author operates in the same way for advanced stages of prolapse when the patients do not expect any more children; if they do, he recommends pessary treatment and as much of the superfluous vagina as is necessary is resected. He avoids prolapse recurrence by pushing the posterior vaginal wall up with the end of a long curved spatula behind the uterus and fastening it with silk to the uterus at the internal os and laterally to the sacro-uterine ligament—the necessity of posterior colporrhaphy is thus done away with. He finishes with a perineorrhaphy by the Lawson-Tait method.

In conclusion the author describes a case of total prolapse of the vagina after extirpation of the uterus, which he treated successfully by ventrofixation of the vagina. In cases where a pessary does not hold the prolapse in position, he applies two hard ring pessaries of different sizes, which then stay in place.

FRANKENSTEIN.

Novak, J.: Effect of Removal of the Adrenals on the Genital Organs (Über den Einfluss der Nebennierenausschaltung auf das Genitale). *Arch. f. Gynäk.*, 1913, ci, 36.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

There is very little known of this subject clinically and Novak tried to extend the knowledge of it by experimentation. From his experiments on animals he concludes that (1) extirpation of the adrenals in rats causes a hypoplasia or atrophy of the genitals, which is more pronounced the younger the animal is at the time of the operation. (2) Partial extirpation of the adrenals does not cause any injury to the genital organs. (3) The genital atrophy is especially marked in animals in whom tumors of the adrenals have been produced artificially. (4) The genital atrophy is not due, or at any rate only slightly so, to decreased nutrition, but comes from the cutting off of the specific internal secretion of the adrenals. (5) Potency and capacity for conception are markedly decreased in animals from which the adrenals have been removed. (6) Pregnancy need not necessarily be interrupted by removal of the adrenals. The few clinical results known are in accord with those obtained by animal experimentation.

WEISSWANG.

Choledkowsky, A. M.: One Thousand Laparotomies, Abdominal and Vaginal (1000 Laparotomien, abdominal und vaginal). *Nachr. d. k. Milit.-Med.-Akad.*, 1913, xxvii, 769.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author's work consists of 19 divisions, which are summarized as follows:

1. In one hundred and twenty-eight cases of myoma, he found that in fibromyoma the adnexa were generally involved. They were benign, anatomically, even when they were not so clinically. He recommends supravaginal caesarean section in myoma; in myoma and pregnancy he recommends operation if there are multiple myomata, expectant treatment if there is only one.

2. In one hundred and ninety-two cases of cancer of the uterus, 11 were operated on through the abdomen, and 181 through the vagina.

3. He found one hundred and twenty-six cases of cystoma. In such cases, if the circumference of the abdomen is between 100 and 110 he recommends the opening of the abdomen above the umbilicus because of the possibility of adhesions between the umbilicus and the symphysis.

4. In twenty-two cases of malignant new-growths of the ovary, one case of malignant tumor of the ovary with pregnancy, in which a supravaginal caesarean section was performed, is especially noteworthy. There was recurrence in the operation scar two years after the operation.

5. In one hundred and sixty-four cases of inflammatory conditions of the adnexa, gonorrhoea was responsible in the majority of the cases. In regard to the relation between salpingitis and appendicitis, appendicitis appears as a secondary affection in salpingitis only when the appendix is congenitally abnormally long. He denies the close connection of the lymphatic systems of the appendix and adnexa.

6. Of sixty-eight cases of extra-uterine pregnancy, 62 cases were unilateral, 2 bilateral in the tubes, 2 in the ovaries, 1 interstitial, 1 in a rudimentary accessory cornum, and 1 in a tube emptying into a rudimentary cornum. In almost 78 per cent of the cases the typical symptom of cramplike pains in the abdomen was present; in 66.1 per cent there was hæmorrhage from the vagina; in 53 per cent there was retained menses. He agrees with Dourend that operation should be performed before five months, expectant treatment after five months.

7. There were 90 cases of retroversion and flexion of the uterus. The treatment consisted of massage or operation, either abdominal or vaginal. In 85 per cent of the cases there was pain and painful coitus.

8. From one hundred and eighteen cases of prolapse of the uterus, he concludes that retroversionflexion of the uterus in pregnant women leads later to prolapse.

9. In ninety-three cases of congenital anomalies of development of the uterus, monthly pains led to removal of the adnexa.

10. There were two cases of traumatic injury of the abdomen through the vagina.

11. Of caesarean section there were six cases. The author is a strong advocate of this operation.

12. There were four cases of echinococcus in the abdominal cavity: in one case there was a severe combination of multiple echinococcus with pregnancy and appendicitis.

13. In all there were eleven cases of tubercular peritonitis. For this the author advises operation.

14. In twenty-two cases of post-operative hernia there was one case of plastic operation on the intestine with good results.

15. There were seven other hernias: 2 of the linea alba, 4 of the umbilicus and 1 inguinal hernia with prolapse and incarceration of the left ovary.

16. Of pyometra, there were seven cases with inflammatory adhesions in the cervical canal.

17. There was one case of primary carcinoma; and 6 malignant new-growths of the uterus and intestines.

18. The uterus was removed for metritis in eight cases. The author believes that this operation should be performed oftener after the forty-fifth year.

19. Talma's operation for ascites was done in one case.

The author describes the technique of abdominal incision, hæmostasis, and autoplasmic operation. He calls attention to the fact that good control of hæmorrhage is necessary for a favorable post-operative course and lays special stress on peritonization. He recommends irrigation with Lock's fluid and a thorough closure of the scar as the best means of securing uninterrupted recovery and avoiding ileus.

KRINSKI.

Löliger, E.: Cases of Death after Gynecological Operations, from 1901-1911 (Kritik der Todesfälle nach gynäkologischer Eingriffe während der Jahre 1901-1911). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxiv, 757.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Of the 163 deaths reported, 62, or 37.1 per cent, were due to infection; embolus caused 38, or one quarter of all the deaths; myodegeneration and acute dilatation of the heart was the cause of death in 28 cases, 11 per cent. Extreme Trendelenburg position is to be avoided. Heart disease, anæsthesia, and nerve shock frequently cause death. No death resulting purely from the anæsthetic was observed, but there were five deaths after operation for myoma, confirming the relation between myoma and heart degeneration. Pneumonia and bronchopneumonia were observed 7 times; 9 cases died of acute anæmia, among them 2 cases of extra-uterine pregnancy brought to the hospital too late. Post-operative ileus was observed only once. The 8 cases of cachexia were due, with two exceptions, to malignant tumors. Further causes of death were: perforative peritonitis three times, air embolus twice, and complications in the urinary system twice.

The means of avoiding these fatalities are discussed: Spillmann's method of disinfecting linen and catgut is described, and the disinfection of the hands with tetrachlorethyl soap solution and acetone-alcohol. Lugol's solution is recommended instead of tincture of iodine. The author warns against washing the gloves with bichloride during the operation, claiming that it does not disinfect the gloves and that there is danger of carrying bichloride into the wound. He thinks irrigating with sterile salt solution is sufficient, or a change of gloves if necessary. Air-borne infection may be avoided by having the operating room frequently aired and having it face the south so that sunshine is freely admitted. Thorough sponging of the abdomen prevents its becoming infected with pus. Höhne's method of applying oil is of no special value. The period of anæsthesia should be shortened as much as possible and likewise the amount of the anæsthetic given should be limited to the bare necessity demanded. Veronal-scopolamine-morphine (pantopon) should be given in preparation. More extensive use of local anæsthesia is recommended and spinal anæsthesia is rejected. The numerous thromboses and emboli may be avoided by early movements of the legs and respiratory exercises. After laparotomy the patients may get up on the fifth day; after operations for prolapse on the seventh to eighth day. To decrease the coagulability of the blood, fruit acids should be given in large quantities. Careful examination of the lungs, especially at the time of influenza epidemics, will limit lung complications. Ileus may be prevented by avoiding the use of antiseptics in the wound, polished gloves, damp abdominal sponges, the leaving of large stumps; careful covering over with peritoneum being advised.

LIEBICH.

Peham, H.: Radium Treatment in Gynecology (Zur Radiumbehandlung in der Gynäkologie). *Wien. klin. Wchnschr.*, 1913, xxvi, 1650.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author, in using radium in 12 gynecological cases, found that tumors of the female genitalia that could be irradiated directly were favorably influenced, as has long been known to be the case in skin carcinomata. From experience thus far, however, radium cannot be called a specific cure for cancer; therefore, at present there is no justification in recommending radium in the place of operative treatment. The author thinks it questionable to submit an early carcinoma to a long radium treatment, for the chances are decreased by delaying the operation, but he recommends the use of radium in inoperable cases and in recurrences.

RUNGE.

Recasens, S.: Organotherapy in Gynecology (Organotherapie in der Gynäkologie). *Tr. Internat. Cong. Med.*, Lond., 1913, Aug.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The relations which exist between infantilism, dysmenorrhœa, and hypoplasia of the ovaries caused

Recasens to attempt to treat such cases by organotherapy. The difficulty of the treatment lies in the fact that extracts of organs from different species have to be used, as it is impossible, from ethical considerations, to remove the organs of healthy individuals, but sometimes material from operative cases can be obtained. The author has used ovarian extract from patients operated on for myoma—he proposes to call it ovariomym—and has found that it contains a much more active hormone than the animal preparations.

It has long been known, that in myoma of the uterus there are changes in the ovaries, manifested macroscopically, by an increase in volume and, microscopically, by hyperplasia of the interstitial cells of the stroma. These changes are generally regarded as the result of the myoma, but he regards them as the cause. The overproduction of muscle and connective-tissue elements in myoma has a certain resemblance to the changes in the uterus in the early months of pregnancy, when there is always hyperactivity of the ovary. Histologically, the formation of a corpus luteum in pregnancy is characterized by a hyperproduction of interstitial stroma cells which may be regarded as a protection for the mixed secretion of the ovary. Another important phenomenon is the effect of ovarian function on the mucosa of the uterus in the premenstrual period, which has been minutely described, from the histological point of view, by Hirschmann and Adler.

All these considerations led Recasens to assume a causal relation between the changes in the stroma of the ovary and the myomatous hyperplasia of the uterus. Other facts bearing on the subject are, the cessation in growth of the tumor when the ovarian function stops, and the manner in which X-ray and radium treatments affect the myoma, exercising their strongest action at the time of the menopause when the ovary consists chiefly of stroma cells.

A third of all cases of dysmenorrhœa in young virgins is due to infantilism of the uterus, which is accompanied by faulty development of the ovaries. In a great many women dysmenorrhœa ceases after the establishment of regular sexual relations which favor the development of the ovaries. In others, however, it continues, on account of anatomical anomalies in the ovaries or functional disturbance; the uterus remains hypoplastic and its mucous membrane never attains a normal pre-menstrual condition. Sterility generally accompanies dysmenorrhœa. Another form of defective ovarian function is presented by the cases of cystic degeneration, in which, after a period of hyperactivity, manifested by menorrhagia, the menstrual flow gradually decreases and finally stops, following which, pseudo-hysterical symptoms generally appear.

In ovarian insufficiency, the author has used

ovarian extract from women with myoma, basing its use on the assumption that it has heightened inner secretory activity. The ovaries came from healthy women, under 35 years of age, operated on for myoma. There was a marked increase in blood-pressure in all cases but unfortunately the author reports only 7 cases. The extract was given by subcutaneous injection, every three days for a period of one to several months. In two cases of amenorrhœa there was recovery; in two cases, treatment was without effect. Three cases of dysmenorrhœa and oligomenorrhœa were cured and, in one case, conception took place afterward. The number of cases is too small to base any final judgment on as to the results of the treatment.

Von Franqué, O.: Split Pelvis; Duplication of the Internal Genitalia (Über Spaltbecken. Zugleich ein Beitrag zur Verdoppelung der inneren Genitalien). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxv, 76.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

A 22-year-old woman who had previously had no symptoms was delivered of her first child by forceps. Afterwards she had a perineal tear and symptoms of prolapse. On examination several months later an unhealed perineal tear was found, prolapse of the anterior vaginal wall, cystocele, and retroflexed uterus with the cervix visible in the vagina. All pelvic measurements were practically normal but there was a cleft 2 cm. broad at the symphysis, which, by spreading the legs apart, could be widened to 6 cm.; there was no diastasis of the recti muscles and no malformation of the bladder. Röntgen examination showed typical signs of the second form of split pelvis described by Von Breus and Kolisko; but contrary to the cases previously published, there were no other anomalies of development in the internal or external genitalia or the abdominal wall.

The operation consisted of anterior colpotomy, antelexion of the uterus by shortening the round ligaments, and anterior and posterior colporrhaphy. The union of the perineal muscles was made very difficult by intense transverse tension. When the patient was discharged the uterus was antelexed, the vagina was very narrow in the upper part, but gaping in the lower part, as the sutures had failed to hold. There was recurrence and a year later another unsuccessful operation was performed.

The author had another case of split pelvis which was combined with diastasis of the rectus muscles. The external genitalia showed signs of abnormal development, the internal ones were duplicated. The patient was spontaneously delivered of a living, normally developed child. After the puerperium the cleft in the pelvis was closed, since which time the patient has had no symptoms. The author thinks prolapse was prevented in this case by extensive bilateral episiotomy which healed by first intention.

HOLSTE.

OBSTETRICS

PREGNANCY AND ITS COMPLICATIONS

Herz, E.: Extract of Hypophysis in Placenta Prævia (Hypophysenextrakte bei Placenta prævia). *Zentralbl. f. Gynäk.*, 1913, xxvii, 1536.

By *Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.*

The author has used extracts of hypophysis in 7 cases of placenta prævia, combined with all kinds of methods of treatment: rupture of the membranes, Braxton-Hicks version and intra-amniotic metreury-sis, and in 5 of the cases there was strengthening of the labor pains. Once there was no effect, and once pituitrin caused a spastic contraction of the os and delayed delivery. He recommends extract of hypophysis (1) after rupture of the membranes in longitudinal positions, whether the placenta prævia is total or partial, (2) after metreury-sis, (3) after Braxton-Hick's version, (4) in the third stage, combined with ergotin.

FREUND.

Harrar, J. A.: Efficient Methods in the Treatment of Placenta Prævia. *N. Y. St. J. Med.*, 1914, xiv, 81.

By *Surg., Gynec. & Obst.*

In reviewing the histories of 70 patients dying of placenta prævia in the New York Lying-in Hospital during the past 20 years, the author found that 30 of these cases were received in a condition of shock and almost moribund from acute exsanguination, because they had been allowed to bleed for hours and days, under the care of their private physicians, without any sort of treatment at all.

In this series it was found that 50 of the cases died of shock and hæmorrhage; 14 died of puerperal infection; 5 of rupture of the uterus; and 1 of œdema of the lungs. These 70 deaths represented a maternal mortality of 15 per cent in 466 cases of placenta prævia occurring in 81,000 confinements.

"This series of 466 cases includes the group of 250 reported by McPherson in 1908. In the group of cases delivered prior to 1908, the maternal mortality was recorded as 18 per cent. In the group of 216 cases delivered in the succeeding 5 years the maternal mortality has fallen to eleven and one-half per cent," which the author believes is due to the following reasons: (1) Patients are now sent to hospitals earlier than heretofore and are therefore received in better condition for treatment. (2) In the hospital treatment for placenta prævia, accouchement forcé is being abandoned, and recourse is being had more frequently to early delivery by cæsarian section.

The author carefully considers the diagnosis of placenta prævia and concludes by advising the following treatment: If the patient is a primipara near term with a living child, and has the first hæmorrhage with the cervix still long and closed,

abdominal cæsarian section will probably give best results. If cæsarian section is contra-indicated in these cases, tampons of iodoform gauze should be used. The Voorhies bag should be used when the cervix is found dilated to two fingers and mother and child in good condition. If the cervix is two or more fingers dilated and the child dead or non-viable, bipolar version after the manner of Braxton Hicks should be done. In certain cases he advises the use of the metreurynter.

WM. D. PHILLIPS.

Keller, R.: Changes in the Follicles of the Ovary During Pregnancy (Über Veränderungen am Follikelapparat des Ovariums während der Schwangerschaft).

Beitr. z. Geburtsh. u. Gynäk., 1913, xix, 13.
By *Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.*

In the author's morphological study of the changes in the follicles of the ovary during pregnancy, twenty-four cases were examined, 6 of them in the second to fourth months of pregnancy, 7 in the fifth to the seventh, and the rest in the latter months. The author considers especially the question of whether ovulation ceases during pregnancy, and he comes to the conclusion that all large follicles undergo atresia, until the end of pregnancy; while the primordial follicles, probably because of the special resistance of their cells, and most of the follicles in the earliest stages of development, are preserved. He concludes, therefore, that no ovulation occurs during this time.

Atresia of the follicles and the development and degeneration of the corpus luteum are also discussed by the author. He distinguishes two forms of atresia of the follicles, a cystic one which involves mostly the larger follicles, and an obliterating one which affects the smaller ones. His findings in regard to proliferation of thecal lutein cells confirm those of Seitz, Wallart, and others, while his findings in regard to the origin and retrogression of the corpus luteum agree with those of Meyer and Cohn. The corpus luteum consists of two kinds of cells: the real lutein cells, which originate from the epithelium of the granulosa and are, therefore, epithelial, and the small epithelioid thecal lutein cells, which are connective-cells from the internal theca. The retrogression of the corpus luteum is very irregular, so that no laws can be laid down in regard to it.

SCHAUENSTEIN.

Eisenbach, M.: Heart Disease and Pregnancy (Über Herzerkrankung und Schwangerschaft).

Beitr. z. Geburtsh. u. Gynäk., 1913, xix, 39.
By *Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.*

Among 3,037 deliveries the author found 45 cases complicated with heart disease. There is generally

no serious danger if the heart lesions are compensated. Difficulty is to be feared only in especially severe forms. The kind of heart lesion has no especial effect; there is even no particularly unfavorable effect from mitral stenosis.

If failure of compensation begins during pregnancy and internal treatment has no effect, abortion should be performed as soon as possible. In the second half of pregnancy a quick and conservative method is vaginal incision of the uterus under spinal anaesthesia. There is no tendency to spontaneous abortion in heart disease and the danger during delivery is generally slight.

Pure valvular lesions do not offer any danger if the heart muscle is in good condition; but if the muscle is diseased the sudden variations in pressure caused by the pains may lead to insufficiency in the very beginning of the second stage, even if there have been no symptoms of lack of compensation before. Generally, a shortening of the delivery by operation is not necessary. Operation should be limited to those cases in which there is a threatening insufficiency during labor, due to severe disease of the muscle. If the course of earlier pregnancies has shown that the additional burden on the heart entailed by pregnancy and labor threatens the woman's life, operative sterilization is indicated.

There is no increased danger of atony in heart disease. Puerperal infection, even of mild degree, may cause grave danger if the heart is diseased; there is serious danger of endocarditis, and the patient should not be allowed to get up too soon.

Nursing is not contra-indicated in heart disease, except in severe cases of failure of compensation. The children of mothers with heart disease are generally normally developed. Age is of great significance in the prognosis; the older the woman the more danger. This is due to the fact that the condition of the heart muscle grows progressively worse with advancing years, and also to the unfavorable effect of repeated pregnancies.

RUNGE.

Weise, F.: Carcinoma of the Uterus and Pregnancy (Uteruscarcinom und Schwangerschaft). Langensalza: Wendt & Klauwell, 1913.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author describes three cases and discusses in detail the co-existence of carcinoma of the uterus and pregnancy and cites the following cases: The first case was a 33-year-old III-para, who had a cauliflower carcinoma as large as an apple, posteriorly and to the right of the cervix in the ninth to the tenth month. There had been hæmorrhage for two weeks. A cesarean section was done and abdominal total extirpation. Death resulted a year later from recurrence. The child lived.

The second case was a 31-year-old X-para, with hard nodules in the cervix in the seventh to eighth month of pregnancy. A cesarean section was performed, also abdominal total extirpation and left-sided nephrectomy on account of cutting the ureter in removing the glands. Recovery followed.

The third case was a 36-year-old IX-para, who had a cauliflower carcinoma as large as a walnut on the posterior lip of the os, in the third to fourth month of pregnancy. Recovery followed abdominal total extirpation.

The author reckons the frequency of uterine carcinoma during pregnancy as 0.07 per cent, from statistics of 113,750 births. As an explanation of the rapid development of carcinoma during pregnancy he points out the better nutritive conditions for the new-growths that are brought about by pregnancy, and the greater weakness of the body on account of the production of antilytic bodies both against the pregnancy and against the cancer. For the diagnosis of carcinoma of the cervix, which is often difficult, he recommends testing the cervical tissue as to its friability by means of a fine curette.

In treating inoperable cancer, the child's life must be taken into account, and the author believes that this is furthered more by general treatment to improve the mother's strength than by local symptomatic treatment of the cancer. In operable cancer during the first two-thirds of pregnancy the Wertheim-Bumm operation should be performed at once, without regard to the child; in the last third and during labor the classical cesarean section is to be preferred. In cases where operability is in doubt he recommends exploratory laparotomy.

VASSMER.

Rübsamen, W.: Treatment of Pyelitis during Pregnancy by Irrigating the Pelvis of the Kidney (Zur Behandlung der Pyelitis gravidarum mittels Nierenbeckenspülungen). *Ztschr. f. gynäk. Urol.*, 1913, iv, 170.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

There is no unanimity of opinion in regard to the treatment of pyelonephritis in pregnant women. In mild cases rest in bed, copious drinking of water, and local heat is sufficient. In severe cases irrigation of the kidney pelvis after catheterization of the ureters is an excellent treatment.

Three cases have recently been treated in this way and in two of them cure was attained to such a degree that bacteria could no longer be demonstrated. In all the cases the disease was unilateral: twice it was colon infection, once a mixed infection of colon and diplococci, and there were 20, 40, and 110 ccm. turbid urine collected in the pelvis. The injections were made into both kidneys on the first introduction of the catheters; contrary to the practice of other authors who avoid injecting the healthy side, 10 ccm. of 25 per cent protargol solution was given. The bladder was irrigated at the same time and afterward.

MERTENS.

Mann: Glycosuria of Pregnancy a Form of Renal Diabetes (Die Schwangerschaftsglykosurie, eine Form des renalen Diabetes). *Ztschr. f. klin. Med.*, 1913, lxxviii, 488.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author examined the blood of the women at the gynecological clinic at Breslau who showed

glycosuria, either spontaneously or on the administration of sugars. From his results it seems that almost all pregnant women have a latent renal diabetes. The severest degree of this disturbance is the spontaneous diabetes of pregnancy. In some cases it appears spontaneously, in others only after an excess of carbohydrates or grape-sugar has been given. These differences are explained by the greater or less functional injury to the kidney. All kidneys during pregnancy are sensitive to the sugar content of the blood, whether it lies within normal bounds or exceeds them a little. If the sugar content of the blood varies a little bit up or down, the kidneys react with a greater or less output of sugar.

BRUNO WOLFF.

Novak, J., Porges, O., and Strisower, R.: A Peculiar Form of Glycosuria in Pregnancy, and Its Relation to True Diabetes. I. Glycosuria of Pregnancy (Über eine besondere Form von Glykourie in der Gravidität und ihre Beziehungen zum echten Diabetes. I. Schwangerschaftsglykourie). *Ztschr. f. klin. Med.*, 1913, lxxviii, 413. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

From their experiments the authors come to the conclusion that glycosuria during pregnancy is due as a rule to hypersensitiveness of the kidneys to sugar in the blood, but that in most cases there is no disturbance in carbohydrate metabolism. Neither the spontaneous nor the alimentary sugar output during pregnancy can be taken as an indication of the existence of a liver peculiar to pregnancy with demonstrable anatomical and functional changes. They also report three cases of pregnancy complicated with true diabetes. The harmful effect of diabetes on the foetus was shown in these cases, as well as the injurious effect of the pregnancy on the course of the diabetes. There was hydramnios in one case, which is undoubtedly due to the diabetes. The most important difference between a true diabetes and an intense glycosuria of pregnancy is in the sugar content of the blood.

BRUNO WOLFF.

Jahnel, F.: Psychic Disturbances in Pregnancy (Ein Beitrag zur Kenntnis der geistigen Störungen bei der Eklampsie). *Arch. f. Psychiat. u. Nervenkr.*, 1913, lli, 1095. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Psychic disturbances are not unusual in eclampsia, occurring in 6 per cent of all the cases. Jahnel reports two cases in detail as follows:

In the first case a woman who had always been well had several attacks of eclampsia after her first delivery, which were followed by a stuporous condition. After a short period of clearness she had an attack of hallucinatory delirium lasting two days. She had hallucinations of seeing animals and small moving objects; there was anxiety and difficulty in comprehension. She was given an injection of hyoscine and after she awakened from the sleep, her mind was clear, but there was amnesia extending back to before the delivery.

In the second case a 25-year-old primipara had severe attacks at the beginning of eclampsia, which stopped after delivery. Three days later a state of anxious excitement developed with sensory delusions, which gradually increased in intensity, and at its maximum there was anxiety, confusion, and motor restlessness. The excitement gradually decreased and disappeared entirely after twelve days. There were defects in memory in this case also, but not so pronounced as in the first one.

Eclamptic delirium shows many points of resemblance to alcoholic delirium, but is distinguished from it by a lack of suggestibility for hallucinations and a real occupation delirium. Retrograde amnesia is characteristic of the psychoses of eclampsia, and is regarded by most authors as the result of a general depression of all the psychic functions caused by the pathological processes, oedema of the brain, hydrocephalus, brain hæmorrhage. The eclamptic psychoses generally appear in three forms, a short stuporous condition without excitement or confusion, or in one of the forms described above. Frequently, but not always, there is fever. The eclamptic psychoses must be differentiated from epileptic, alcoholic, and other forms of puerperal psychoses. It may be distinguished from epileptic psychoses by the lack of aggressiveness, from alcoholic psychoses by the history and the lack of suggestibility for hallucinations; it can be distinguished from the ordinary puerperal psychoses by the history of previous attacks of eclampsia and kidney disease. The treatment is the same as that for eclampsia.

KÖHLER.

Curtis, A. H.: Vomiting of Pregnancy Treated by Injection of Blood of Normal Pregnant Women. *J. Am. M. Ass.*, 1914, lxii, 696.

By Surg., Gynec. & Obst.

The author reports one case thus treated. A IV-para, 36 years old, had had a puerperal infection after the first baby; the second pregnancy had been interrupted because of a placenta prævia; the third was normal in all respects, and in none had there been any evidences of renal disturbance or intoxication. In about the fourth month of her fourth pregnancy she developed general malaise with a rise of one to three degrees in temperature. With the onset of life, she had tenderness, dragging, and aching pain in the right lower quadrant, which became constant; nausea and vomiting developed which finally became intractable. The patient was not neurotic, and no abnormalities were found.

The treatment consisted of injecting into the muscular tissue of the back 15 ccm. of blood, taken from a pregnant woman who gave a negative Wassermann test. The symptoms improved in eighteen hours and although the emesis continued, a large proportion of the food was retained. Five days later, 10 ccm. of defibrinated blood, taken from another pregnant woman who also gave a negative Wassermann, was injected, whereupon complete cessation of vomiting occurred in eighteen hours.

Two more injections were given within the next two days; thereafter all treatment was discontinued. Pregnancy continued undisturbed, followed by a normal labor and a healthy child. EDWARD L. CORNELL.

Nicholson, W. R.: The Extraperitoneal Cæsarean Section; Its Place in Obstetrics. *Surg., Gynec., & Obst.*, 1914, xviii, 244. By Surg., Gynec. & Obst.

The operation is really a development of the old laparo-elytrotomy; certain modifications and the development of present-day asepsis render its performance justifiable. Many foreign operators advocate this operation, but in this country at the time of writing but two men had used the method.

In the hands of the larger number of operators the procedure is really a transperitoneal section, the leaflets of the peritoneal reduplication being closed again before the uterine incision is made.

The Continental operators have vied in producing modifications in technique which are to a great extent unimportant. A special scope similar to a single forceps blade with an exaggerated cephalic curve has even been devised to expedite the delivery of the head through the uterine incision, but the outlet forceps are found to work as well if not better.

The most satisfactory technique in the author's experience is as follows: (1) Longitudinal incision from the symphysis upwards to about three fingers below the navel through the skin, fascia, and muscles; (2) longitudinal incision, through both layers of the peritoneal reduplication, from the top of the bladder to the point at which the visceral leaflet becomes adherent to the uterus; (3) uniting the visceral with the parietal cut edge throughout; (4) opening the uterus also in a vertical direction; and (5) extraction of the child and closure of the uterine and peritoneal incisions and the abdominal wall according to the recognized methods.

The operation is decidedly more difficult than the classical, and, except in the hands of a few enthusiasts, will be reserved for so-called "suspect" cases of infection and not for the actively septic woman.

Vertes, O.: Pathogenesis of Eclampsia (Zur Pathogenese der Eklampsie). *Orvosi Hetilap.*, 1913, lvii, 771.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The pregnant body is placed in an anaphylactic condition by the absorption of chorionic villi. Therefore eclampsia is to be regarded as an anaphylactic shock, partly because the symptoms bear a certain resemblance to those of anaphylaxis, partly because of the resemblance in the changes which take place in the organs of animals dead of anaphylactic shock and those of women dead of eclampsia. FRIGYESI.

Leighton, A. P.: The Cause and Cure of Eclampsia. *J. Me. M. Ass.*, 1914, iv, 1712.

By Surg., Gynec. & Obst.

The author is of the opinion that food is the actual exciting cause of eclampsia and the primary cause

of toxæmia giving rise to heart-failure. He reports 4 cases in which the ingestion of food, even milk and whey, caused a return of convulsions and eclamptic symptoms. His treatment is conservative and he describes briefly the Dublin and Stroganoff methods as follows:

The Dublin method of treatment includes the following provisions:

1. Delivery when possible only. Accouchement forcé is not advocated in any form.

2. Metabolism is limited and further metabolism avoided, by starvation, morphine, and gastric lavage.

3. Excretion is aided by purging and irrigation of the bowels. Sweating is never used, bleeding is in some cases. The breasts are infused with sodium bicarbonate solution.

4. Special signs, such as respiratory and cardiac weakness, are treated. Morphine is used to control convulsions.

The Stroganoff treatment is almost identical with the Dublin except that large doses of chloral are given with the morphine to control convulsions, by way of the rectum. The examination, irrigation, lavage, etc., are done with light chloroform anæsthesia. WM. D. PHILLIPS.

Austin, G. K.: Eclampsia, with Total Absence of Albumin, but Generalized, Hard Œdema. *Med. Rec.*, 1914, lxxxv, 384.

By Surg., Gynec. & Obst.

The case Austin reports is that of a woman about 35 years old who seemed perfectly normal all through pregnancy in every way. No albumin was present in the urine at any time. The blood-pressure was not taken but the author noticed that the patient seemed to take on a good deal of flesh during the latter part of pregnancy; the fat, however, was symmetrically deposited and had none of the characteristics of œdema.

Labor set in normally and all went well until dilatation was nearly complete, when she had an eclamptic seizure. After delivery of a living fœtus the patient had two more attacks which were stopped by bleeding freely (venisection).

The great increase in weight that Austin had noticed soon disappeared and he discovered it to be a "generalized elastic œdema." He suggests it might have been due to a chloride-retention.

EUGENE CARY.

Szabo, D.: Artificial Abortion (Über den künstlichen Abortus). *Orvoskép.*, 1913, iii, 580.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The necessity for abortion must always be decided in consultation. The author believes it is indicated: (1) In uncontrollable vomiting of pregnancy, in which cases disturbances in metabolism determine the time for performing the abortion. (2) Eclampsia. In one case it had to be performed in the fifth month after the eighth attack; in another case in the seventh month after the fifth attack.

(3) Hydramnios. (4) Retroflexion of the uterus. (5) Heart diseases. (6) Kidney diseases. (7) Tuberculosis. (8) Pregnancy often exerts a pathological effect on the nervous system and produces psychic disturbances. In one case of manic depressive insanity the pregnancy was interrupted in the third month.

In general, the author believes that if pregnancy is the cause of any disease that cannot be cured in any other way, abortion should be performed. If every conception causes danger to life, or permanent injury to the body, further pregnancies should be prevented. The consent of the patient must be given for any course of action. BOGDANOVICS.

Meyer, E.: Induction of Abortion in Psychic Disturbances (Zur Frage des künstlichen Abortes bei psychischen Störungen). *Monatschr. f. Geburtsh. u. Gynäk.*, 1913, xxxviii, 342.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Before taking up the discussion the author goes into the question of whether abortion is indicated in intermittent dementia præcox, which is often seen coincidentally with pregnancy or the puerperium. It must be taken into consideration that a new access does not necessarily accompany pregnancy, that it may take place without pregnancy, and that improvement is by no means assured by the performance of an abortion; nevertheless, the author holds that abortion is justified in such cases. In general he holds that abortion is justified, even if the psychic disturbances are not of such a degree as to absolutely demand it, if an increased injury to the nervous system is to be feared from repeated deliveries. Abortion is not indicated in alcoholic paranoia.

ZINSSER.

LABOR AND ITS COMPLICATIONS

Freeland, J. R.: The Relationship Existing Between the Mechanism and Management of the Third Stage of Labor. *Am. J. Obst.*, N. Y., 1914, lxix, 302.

By Surg., Gynec. & Obst.

The author's report is based upon careful observations made upon 600 cases treated at the Rotunda Hospital, Dublin. At this hospital as soon as delivery of the child occurs the hand is sunken into the abdomen upon the surface of the uterus so that the fundus fits into the hollow of the palm and the uterus is "controlled." The hand is simply held in this position to prevent ascension of the uterus, due to its filling up with blood.

No massage of the uterus is permitted, as its use tends to add complications. The placenta is given every chance to separate normally and unless bleeding occurs no effort is made to express the placenta until evidence is present that the placenta has loosened and lies in the lower uterine segment or vagina. Even after one and a half to two hours the placenta may separate normally. Hasty attempts to accelerate this loosening are decried. In a series of 2600 cases so managed, the placenta separated by Schultze's mechanism in 82.5 per cent of the

cases, by Duncan's mechanism in 17.5 per cent of the cases.

In the cases separating by Schultze's mechanism the membranes were incomplete in only 5 per cent of the cases, while they were incomplete in 15 per cent of the cases after Duncan's mechanism. Antepartum hæmorrhage is followed by escape of the placenta by Duncan's method. The cases of postpartum hæmorrhage and retention of the placenta, he believes, are much more common after Duncan's mechanism. Because of its incidence and its association with abnormal cases, Freeland thinks that Duncan's mechanism is to be considered the mechanism of abnormal cases. N. SPROAT HEANEY.

Dührssen, A.: Delivery in Contracted Pelvis (Geburt bei engem Becken). *Med. Klin.*, Berl., 1913, ix, 735.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

From the present-day obstetrical standpoint, artificial premature delivery is not justified, nor is the perforation of a living child or one that has died under expectant treatment. In certain cases that are undoubtedly aseptic the classical cæsarean section is advisable. It is best to perform it before the beginning of labor pains in cases where the cervix will admit one finger, while in cases that are infected, or even suspected of being infected, the extraperitoneal route should be chosen.

After a chronological enumeration of the operations that try to avoid the peritoneum, the author recommends Solms' method of extraperitoneal cæsarean section, because it is possible with it to obtain an actual extraperitoneal delivery. It is distinguished from its predecessors by the fact that two incisions are made, one an inguinal incision from without, and then an incision through the anterior vaginal vault and the cervix in the median line from below. The latter incision, if necessary, can be extended to the body of the uterus. By bringing together the inner and outer incisions a short canal is produced. The uterine vessels and the ureters are not injured.

A further advantage of this method is that, because of the position of the incisions, the distention of the lower uterine segment does not have to be waited for, which is very important in quick delivery. Moreover, by the use of the metreurynter incision it can easily be performed in a private house. Accidental opening of the bladder and peritoneum can be practically excluded if the directions given for making the incisions are carried out exactly. Vaginal drainage with iodoform gauze after delivery is important. BORELL.

Esch, P.: Effect of Contracted Pelvis on Delivery in Normal Head Presentations (Über den Einfluss des platten Beckens auf die Geburt in normaler Schädelage). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxiv, 920.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

From the literature and the Marburg Clinic the author has collected, in all, reports of 4,167 normal

head presentations with a true conjugate between 6.5 and 10 cm., from which he draws the following conclusions:

The effect of contracted pelves on delivery in normal head presentations is about the same in multiparæ as in primiparæ. The more favorable prognosis for children of multiparæ with a conjugate to 9.25 cm. is due to the lesser degree of resistance of the soft tissues. The slight advantage in favor of primiparæ in more pronounced degrees of contraction is probably due to the fact that II-paræ, III-paræ, and multiparæ are all called multiparæ. Apparently the conditions for the spontaneous engagement of the head are less favorable in multiparæ.

Of the 4,167 cases observed, 3,647, or 87 per cent, passed the pelvic inlet spontaneously and were delivered alive; with a true conjugate of 9.8 cm., 96.2 per cent; with 9.05 cm., 91.1 per cent; with 8.05 cm., 74.7 per cent; with 7 cm., 14.9 per cent. From these figures the author has made a very instructive curve, which makes it possible to give a prognosis in every degree of pelvic contraction, and to serve as a basis for therapeutic measures. The curve is especially valuable for teaching purposes. BLEEK.

Cuny, F.: Treatment in Delivery in Contracted Pelvis in Basel (Die Behandlung der Geburt bei engem Becken in Basel). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxiv, 709.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Two thousand cases of delivery in contracted pelvis were observed. In the period from 1902 to 1909 there were 1,389 cases of contracted pelvis among 10,289 obstetrical cases, or 13.7 per cent. From 1910 to the middle of 1912 there were 668 cases of contracted pelvis among 2,036 labors in which 2,061 children were delivered, 1,663 of them, or 80.7 per cent, spontaneously. The longest duration of labor was 6 days in a 38-year-old VIII-para. Of the children 3.7 per cent were born dead or died. In most of the cases delivery was spontaneous. Active treatment was reserved for severe cases.

Version was performed among 1,389 cases 9 times, or 0.06 per cent. Among the 668 cases it was performed 16 times, or 2.3 per cent. One mother died. Among the children 9 deaths were due to the version, or 18.3 per cent. Forceps were used in 71 cases, or 5.1 per cent. From 1910 to 1912 secacornin or pituglandol were used 25 times, or 3.7 per cent. High forceps were used on 10 primiparæ and 16 multiparæ, 13 times for the sake of the mother and 13 for the child. Six of the children died, two of the deaths not being due to the forceps, or 15.3 per cent.

In agreement with Mischer, Cuny thinks high forceps justified in cases of contracted pelves and that it is the last means of delivery except perforation of the child, and is preferable to other operations as being more conservative for the mother, and therefore suitable for private practice. Craniotomy and embryotomy were performed 19 and 9

times, never on the living child; they were performed 8 times as a secondary operation. Puncture of the membranes furthers normal progress of the labor.

A too long duration of labor may be shortened by secacornin and pituglandol, or by discharge of the water through the rupture of the membranes, but it seldom renders version more difficult. Infection of the contents of the uterus by vaginal bacteria can be avoided by periodical vaginal douches. In 126 cases of induction of premature delivery in the first series of cases, rupture of the membranes was practiced 108 times, and in 24 of the last series of cases.

A few labors lasted only 3 to 4 hours, the longest was 18 days. Of the 153 children which were born, 24 of them were dead, and 8 died soon after; 86.2 per cent of the children were born living and 80 per cent discharged living. This result shows the value of artificial premature delivery in practice in the home. Thirty-three cases had fever, 15 of them, or 11.9 per cent, of genital origin. Of the 150 premature deliveries 87 per cent were spontaneous. Pubiotomy was used in 8 cases, or 0.5 per cent; because of the permanent injury to the mother it should be used only in cases of extreme necessity. Cæsarean section was performed in 12 cases; 1 child and 2 mothers died; 10 of the mothers had puerperal fever. For the entire number of cases the mortality among the children was 8.2 per cent, counting out those not due to the contracted pelvis, 7.8 per cent; the total morbidity of the mothers from puerperal fever was 22 per cent, reduced 15.7 per cent; mortality of the mothers total 0.5 per cent, reduced 0.09 per cent. The best method of artificial premature delivery is to be recommended for the sake of the mothers, especially in practice in the home.

BONZEL.

Bayer, H.: Rupture and Puncture of the Membranes; and Stricture of the Cervix (Über Blasensprung und Blasenstich und über Strikturen der Cervix). *Ztschr. f. Geburtsh. u. Gynäk.*, 1913, lxxiv, 1.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The most pressing indications for artificial rupture of the membranes after complete dilatation of the external os are: (1) Tenesmus, (2) hæmorrhage, and (3) appearance of the apex of the bag of waters in the vulva. It is generally thought that the rupture of the membranes increases the force of the pains; it increases the abdominal pressure, but it is questionable whether it heightens the actual uterine contractions; indeed, it frequently leads to a relaxation of labor pains for a greater or less period, for instance, in transverse position. Even in the induction of premature labor by puncturing the membranes, it is not a question of increasing the force of the pains, but of starting them.

The membranes must never be ruptured so long as there is danger of a sudden gush of water turning

the foetus on its axis in high positions. In transverse positions it is only justified in connection with version; if version cannot be accomplished after rupture of the membranes it is advisable to insert a metreu-rynter to avoid a further discharge of fluid. In contracted pelvis, rupture of the membranes is contra-indicated as long as the head is movable above the inlet, and in stricture of the cervix, artificial puncture of the membranes is absolutely contra-indicated. This term indicates a local ring-shaped narrowing of the cervix, not so much a pathological tissue change as a physiological effect of the labor pains under abnormal anatomical conditions, with defective or irregular development of the cervix. He discusses Schröder's and Bandl's theories of the lower uterine segment and its anomalies, and concludes that in all cases where there is reason to suspect an anomaly of the lower uterine segment, the membranes should be spared.

If the membranes rupture of themselves, prematurely, care should be taken to avoid an excessive discharge of fluid. If it is seen that the stricture is acting as a normal contraction ring, that is, that it hinders the discharge of fluid during the pains, expectant treatment is indicated; but if this is not the case, active treatment is demanded. In cases where there is no projection of the bag of waters in front of the presenting part, puncture of the membranes may have an excellent effect on the dilatation of the soft parts, and thus hasten delivery. While the membranes are intact the foetus is seldom injured; but, after rupture of the membrane, it is threatened with dangers which show no signs in the mother's condition, so it is necessary to watch the foetal heart very carefully.

FROMMER.

Follit, H. H.: Unusually Large Tumor of Child, Complicating Delivery. *Australas. M. Gaz.*, 1914, xxxv, 45. By Surg., Gynec. & Obst.

The author reports a case in which a cystic fibroma weighing two and three-fourths pounds was attached to the sacrum of the child. In the course of growth it had lifted the skin off the sacrum behind, the buttocks laterally, and the perineum below, so that the anus and vulva pointed directly forward, and the thighs were spread-eagled at right angles to the body. The tumor was removed the day after delivery and the child made a good recovery.

C. H. DAVIS.

Solowij, A.: An Unusual Cause of Spontaneous Rupture of the Uterus During Delivery (Über eine seltene Ursache der spontanen Zerreissung der Gebärmutter während der Entbindung). *Zentralbl. f. Gynäk.*, 1913, xxxvii, 1623. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

A case of an adherent retroversion of the uterus from gonorrhoeal salpingitis could not be entirely overcome by massage or pessary. During the first pregnancy a diverticulum of the posterior wall was discovered in the second month. It was a breech presentation, but delivery was accomplished readily

by bringing down a foot. In the second delivery there was no diverticulum, but there was a spontaneous rupture of the uterus that was only diagnosed by the condition of the pulse, 45 minutes after the spontaneous delivery of the child. Laparotomy was immediately performed and an oblique tear of the anterior wall found, with adhesions of the posterior wall to the colon and mesocolon. These adhesions were loosened with great difficulty. Supravaginal amputation was followed by death a half-hour after the operation. The author believes that the adhesions of the posterior wall caused the excessive stretching of the anterior wall so that it ruptured, although the delivery lasted only two hours. The author believes the pelvic presentation of the foetus in both deliveries was due to the fact that there was not room in the lower uterine segment for the head, because of the adhesions. The fatal outcome of the case shows that adhesions of the uterus from gonorrhoea should not be regarded too lightly.

BLEEK.

Nebesky, O.: Rupture of the Cord During Labor (Beitrag zur Nabelschnurzerreissung intra partum). *Arch. f. Gynäk.*, 1913, c, 601.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author reports 18 of his own cases of rupture of the cord during labor, in 13 of which microscopical examination of the cord was made. He made weight tests of 100 cords: 3 at the eighth month, 8 at the ninth month, and 89 of full-term children. From these data and an exhaustive study of the literature he comes to the following conclusions regarding the etiology and mechanics of rupture of the cord during labor.

If there is nothing to prevent its falling freely the weight of the child alone is generally sufficient to rupture the cord completely. In premature deliveries the strength of the cord is somewhat less absolute, but not in proportion to the weight of the child. The foetal third of the cord is especially disposed to rupture, the median and placental thirds less so, and the placental insertion least. If the child is delivered suddenly and falls there is little danger of injury to the skull, and not very great danger of hæmorrhage, providing respiration begins at once. The danger is very great if there is velamentous insertion and individual vessels are torn, or if, from the violence of the pains the cord is ruptured before delivery.

The differentiation between a spontaneously and artificially separated cord is often impossible, or at any rate difficult and uncertain. The force of the uterine contractions, if abnormally strong, or if the strength of the cord is reduced, may rupture it. This generally occurs when the cord is absolutely or relatively shortened. The greater or less amount of the jelly and the greater or less number of turns are comparatively unimportant. Cords with dilated or tortuous vessels rupture somewhat more easily than those without these anomalies, but the rupture is seldom at the site of the abnormality.

In very rare cases the cord or individual vessels in it ruptures when there is no demonstrable cause in the shape of weight, increased strength of contractions, shortened cord, or obstetrical operations. Such cases are generally caused by injuries to the histological structure of the cord. Histologically there may be a predisposition to rupture of the cord from lack of elastic fibers in the vessel walls, but this is rare. Such a predisposition is much more frequently caused by histological changes in the musculature of the vessels or a decrease or loose arrangement of the connective tissue which is interwoven with the jelly. Another factor is the possibility of the full force of the contractions being exerted on the blood-vessels which constitute the chief strength of the cord.

VASSMER.

PUERPERIUM AND ITS COMPLICATIONS

Gayler, W. C.: The Dorsal Position During the Puerperium as a Cause of Retroversio Uteri. *J. Am. M. Ass.*, 1914, lxii, 607.

By Surg., Gynec. & Obst.

The author asks the question, "Are we ever justified in putting the recently delivered woman in the dorsal position?" He thinks that this position should be prohibited unless there seems to be an interference with the flow of the lochial discharge while the woman in is other positions. The uterus is larger and heavier than at any time during the woman's life, excepting before delivery, when a posterior position is impossible. The ligaments have not undergone involution, and cannot support the uterus. The normal bladder irritability is usually lacking for several days, often causing unsuspected bladder distention. This tends to push the uterus out of position. Thus at this time there is a temporary weakening of the ligaments, only ligamentary support of the uterus, and an exceedingly heavy and freely movable uterus. All of these have a tendency, in conjunction with the dorsal position, to cause a retroversion. Most authors fail to mention this in either their articles or textbooks.

Gayler cites briefly 74 gynecological cases which entered his clinic. Of these 11 had uterine malposition, 7 of which were complicated by perineal laceration; in the 4 remaining cases, the uterine retroversion could be traced directly to the dorsal position.

EDWARD L. CORNELL.

Leidenius, L.: Effect of Disinfection of the Parturient Woman on the Bacterial Content of the Uterus During the Puerperium (Untersuchungen über den Einfluss der Desinfektion der Kreissenden auf den Keimgehalt des puerperalen Uterus). *Arch. f. Gynäk.*, 1913, c, 455.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The authors make a comparative bacteriological study of the bacterial content of the lochia, about three days after delivery, in women who either were not disinfected during labor (50 cases) or with whom various methods of disinfection were used. The vulvar hair was clipped and the vulva washed with warm water and soap and afterward disinfected with

a 1:2000 bichloride solution in 20 cases, instead of the bichloride 3 per cent hydrogen peroxide which was used in 10 cases; the vulva was shaved and painted with tincture of iodine in 15 cases; in addition to the disinfection of the vulva, vaginal douches of warm water were given in 10 cases, with a hydrogen peroxide solution in 30 cases, and with a 0.5 per cent lysol solution in 15 cases.

The author comes to the following conclusions: (1) By disinfecting the parturient woman the number of bacteria in the genital canal may be markedly decreased and their ascent to the uterus during the puerperium delayed. (2) By the methods of disinfecting the vulva, at present in use, there is only a slight decrease in the bacterial content of the uterus during the puerperium, the effect being much greater if the hair is shaved and the vulva painted with tincture of iodine. (3) By using vaginal douches also the number of bacteria is reduced much further than with disinfection of the vulva alone. There seems to be a mechanical effect in vaginal irrigation, for the bacterial content can be decreased with douches of pure water. It is decreased still further by mildly antiseptic douches, the best one being a 0.5 per cent lysol solution. (4) All kinds of bacteria are equally affected, there being no difference between primiparæ and multiparæ; nor does the length of labor or the time of the rupture of the membranes have any effect. At the end of the first week the uterus contains somewhat more bacteria than in the beginning. In cases with a rise of temperature there are somewhat more bacteria than in those with normal temperature. The practical conclusion is that disinfection of the vulva during labor should be continued and vaginal douches used. FRANKENSTEIN.

MISCELLANEOUS

Paine, A. K.: Serodiagnosis of Pregnancy; a Review. *Boston M. & S. J.*, 1914, clxx, 303.

By Surg., Gynec. & Obst.

The author gives the history of the diagnostic serum test and tells how it was gradually worked out. He describes in minute detail the technique of the test and the theory upon which it is based. He also quotes the results of others in conjunction with his own results and concludes that the study of the protective ferments is of great importance in explaining phenomena of health and disease and that an immunity is developed during pregnancy. He thinks that with good laboratory technique the test is the most accurate present-day method of diagnosis and ranks with the Widal and Wassermann.

EUGENE CARY.

Naumann: Experiments in Demonstrating Pregnancy by Means of Abderhalden's Dialysis (Experimentelle Beiträge zum Schwangerschaftsnachweis mittels des Dialysierverfahrens nach Abderhalden). *Deutsche med. Wchnschr.*, 1913, xxxix, 2086.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Abderhalden's method of dialysis for diagnosing pregnancy was tested on 15 pregnant and 11 non-

pregnant cows. A detailed description is given of the method of obtaining the serum, the preparation of the coagulated placenta and the careful testing of the dialyzing thimbles before using them, as to their penetrability by albumin and the products of albumin decomposition. The reaction was always tested with at least 2 ccm. serum, and in the 15 pregnant animals it was negative once; in two cases the reaction was positive though the cows had already delivered their calves. It is well known that in women the reaction is positive for the first two weeks after labor.

The late reaction was noteworthy in one case four weeks after calving. In the 11 non-pregnant animals the reaction was doubtful in two cases and positive in two. The ninhydrin test is shown to be more reliable than the biuret test. Mistakenly positive reactions are more frequent than mistakenly negative ones. This is probably caused by hæmolysis of the serum. In working with small amounts of serum this hæmolysis cannot be determined with the present methods of testing the serum.

MORALLER.

Scholz, H.: Rosenthal's Diagnosis of Pregnancy
(Die Schwangerschaftsdiagnose nach Rosenthal).

Berl. tierärztl. Wchnschr., 1913, xxix, 858.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author calls attention to the fact that Rosenthal's method of diagnosing pregnancy deserves attention as well as Abderhalden's. It is a method for determining the strength of the proteolytic inhibitory power of the serum. Two ccm. of a casein solution of known strength is placed in each of a series of test tubes, then 0.5 ccm. of a serum diluted with salt solution to a certain degree is added and finally in ascending doses 0.1 to 1.2 ccm. trypsin solution, which has also been prepared according to detailed directions which must be read in the original. In all the months of pregnancy Rosenthal has found an increase in the inhibitory power of the serum as compared with that of normal serum.

VOIGT.

Warfield, L. M.: Presence of Dialyzable Products Reacting to Abderhalden's Ninhydrin in the Urine of Pregnant Women. *J. Am. M. Ass.*, 1914, lxii, 436.

By Surg., Gynec. & Obst.

It occurred to the author that if there was a specific ferment in the blood-serum of pregnant women, it should also be present in the blood-waste. These substances have to leave the body by some route and the most likely one is the urine. These products should be the peptones and amino-acids and they should dialyze out and should then be found in the dialysate. Warfield found such to be the case. At first, urine and pieces of boiled placenta were placed in one dialyzer and urine alone in a second. No difference was noted in the color-reaction obtained with ninhydrin—boiling the

urine made no difference. Urine containing more than a trace of albumin, boiled and filtered clear and placed in a dialyzer, showed in the reaction of the dialysate to ninhydrin no difference from the untreated urine.

The exact technique followed is not given. As seventeen cases only were tested the author does not claim this to be a final report, but only preliminary.

EDWARD L. CORNELL.

Haenisch: The Röntgen Diagnosis of Separation of the Upper Epiphysis of the Humerus in Birth Paralysis (Die Röntgendiagnose der Epiphysenlösung am oberen Humerusende bei Heburtslähmung). *Verhandl. d. deutsch. Röntg.-Gesellsch.*, 1913, ix, 86.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author describes five cases, some of which were sent to him with the diagnosis of birth paralysis. The typical röntgen finding in separation of the epiphysis of the upper end of the humerus consists in the appearance of the first center of ossification to the side of, instead of in a line with the upper end of the shaft of the humerus, which resembles the ridge of a roof. Of the five children, three were operated on with complete recovery.

SCHMID.

Ballantyne, J. W.: The Nature of Pregnancy and Its Practical Bearings. *Brit. M. J.*, 1914, i, 349.

By Surg., Gynec. & Obst.

The author considers this subject from the standpoint of "a general survey of the whole field of pregnancy." He takes up first the theories of pregnancy, of which he cites three, viz., (1) Pregnancy, regarded as parasitism, (2) the pathological theory of pregnancy, and lastly, pregnancy as harmonious symbiosis. This latter theory, as advanced and elaborated by Professor Bar, the author believes in and thinks it the proper viewpoint to be taken.

Ballantyne believes that the maternal response in pregnancy, such as mammary changes, etc., are due to some substance secreted by the unborn infant. Likewise, he believes the ductless glands are stimulated to unusual effort. He compares the action of this kind as similar to the hormone action in digestion and considers pregnancy a physiology at high pressure.

In his opinion the etiology of the maladies of pregnancy cannot be solved until the physiology of normal pregnancy is thoroughly understood.

Pregnancy is not at present considered as seriously as it should be by the medical profession. More care should be taken in the early months to divert the probable complications that may arise later and for this purpose pre-maternity wards should be established. Ante-natal pathology should be worked up in every hospital with a maternity ward and a pathologist should be present to handle this work.

EUGENE CARY.

Van Tussenbroek, C.: The Influence of Pregnancy and Labor on the Mortality from Tuberculosis among Women (Der Einfluss der Schwangerschaft und des Wochenbettes auf die Sterblichkeit der weiblichen Bevölkerung an Tuberkulose). *Arch. f. Gynäk.*, 1913, ci, 84.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author found the mortality from tuberculosis among women in Amsterdam increased in the first half-year after delivery, and decreased in the second half-year, so that the increase and decrease nullify one another. Hence the conclusion that the mortality from tuberculosis in the year following delivery is the same as the general mortality from tuberculosis among sexually mature women. In the mortality curves for women in Amsterdam and the Netherlands there was no sharp fall after the end of the period of sexual activity, as there would be if there was an increase in the mortality from pregnancy and labor. In Amsterdam there was a slightly increased relative mortality for married women, which must be ascribed to other causes, than reproduction.

The prevailing opinion that the mortality from tuberculosis is considerably increased by pregnancy and labor is not confirmed by the author's investigations, and her figures do not show any justification for the performance of abortion for tuberculosis. On this point the author agrees with Weinberg.

RUNGE.

Péterfi, T.: Histology of the Amnion and Origin of the Fibrillary Structures (Beiträge zur Histologie des Amnions und zur Entstehung der fibrillären Strukturen). *Anat. Anz.*, 1913, xlv, 161.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The author reports the examination of the amnion from the embryos of chickens 3 to 8 days old with the various methods of staining. There is a detailed microscopical description of the origin of the fibrillary network inside the amniotic epithelium from vacuolization of the cell-body. The author considers this a constant and characteristic part of the amnion. A limiting membrane resembling haptogen membrane appears around these vacuoles, and is transformed to fibrils simultaneously with a great increase in the size of the vacuoles. The author thinks the origin of this cell-structure may be comprehended much more simply and easily by the aid of physical-chemical conceptions than by purely morphological and often metamicroscopical hypotheses.

MORALLER.

Braude, J.: The Patency of the Cervical Canal and the Os, at the End of Pregnancy (Die Durchgängigkeit des Cervicalkanals und des Muttermundes am Ende der Schwangerschaft). *Zentralbl. f. Gynäk.*, 1913, xxxvii, 1709.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Braude believed that if the cervical canal was found patent at the end of pregnancy it indicated that delivery was imminent, and to demonstrate this

he examined 180 primiparæ in the ninth and tenth months of pregnancy. In 46 women the cervical canal was found open. Among these, the cervical canal was open in 20 cases for 5 to 15 days; in 9, 16 to 25 days. Among 263 primiparæ in the eighth to ninth months, the cervical canal was found open in 28 cases. Among these, it had been open 5 to 15 days in 10, 16 to 25 days in 5, 26 to 45 days in 5 and 46 to 64 days in 3. Among 134 primiparæ in the seventh to eighth months the cervical canal was open in 4 cases, and in all these it had been open 17 to 65 days. The examinations showed conclusively that the patency of the cervical canal and os does not prove that delivery is about to take place even in primiparæ.

WIEMER.

Fulci, F.: The Capacity of the Mammalian Thymus for Regeneration after Pregnancy (Die Restitutionsfähigkeit des Thymus der Säugetiere nach der Schwangerschaft). *Zentralbl. f. allg. Pathol. u. path. Anat.*, 1913, xxiv, 968.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

From his experiments the author believes that during pregnancy an atrophy takes place in the thymus, which is especially marked during the latter part of pregnancy. In this stage elements can be demonstrated in the remaining thymus tissue, probably of connective-tissue origin with large nuclei, which contain cholesterinester and lipoids. He proposes to give them the name infiltration cells, and thinks they are probably connected with the cholesterin metabolism of the body. After pregnancy an active proliferative process begins in the thymus, which may lead in a comparatively short time to complete restoration of the organ. Pregnancy is the cause of a process of involution in the thymus which may be restored again after the pregnancy is over.

RUNGE.

Klotz, M.: The Effect of Birth Trauma on Mental and Bodily Development (Die ätiologische Bedeutung des Geburtstraumas für die geistige und körperliche Entwicklung). *Ztschr. f. d. ges. Neurol. u. Psychiat.*, 1913, viii, 1.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

There are very different opinions as to the relation between abnormal delivery and the future development of the infant. While the greater number of neurologists and pediatricists agree with Little that an abnormal delivery may do irreparable harm to the brain, others, especially Hannes, are of the opposite opinion. The latter followed the history of a series of children born normally, delivered artificially, and delivered in a condition of asphyxia, and found the same percentage of abnormal children in each. His work is defective, however, in that he bases his judgment on too small a number of cases, and compares an equal number of normally and abnormally delivered children, while the latter are so much fewer in number. The question does not seem to be decided so far; it is made more difficult by the fact that

even in cerebral paralyses, juvenile weak-mindedness, etc., heredity plays such an important part that it is difficult to define its boundaries.

From the author's investigations, which relate to authentic material, though the cases were small in number, it would seem that birth trauma has a certain importance. In 7.6 per cent of idiotic children he found no other cause than birth trauma.

SEIGE.

Bondi, J.: The Weight of the New-Born Not Dependent on the Mother's State of Nutrition

(Das Gewicht des Neugeborenen und die Ernährung der Mutter). *Wien. klin. Wchnschr.*, 1913, xxvi, 1026. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

Prochownik's treatment by the control of diet has been in use for 24 years, but results have been shown only in scattered cases and they have not been scientifically tested. It has been shown on the contrary that the foetus is independent of the state of nutrition of the mother and that it grows somewhat in the way of a malignant tumor. The placenta contains the same amount of fat for absorption in the severest hyperemesis or tuberculosis as when the mother is in good condition.

Animal experiments have shown that in animals poisoned with phlorhizin where there is the most extreme emaciation the placenta contains the normal amount of fat. Well nourished women may bear small, weak children, and slender, poorly nourished women sometimes have large, strong children. In nursing it is frequently observed that strongly built women with large breasts have less nourishment than slender ones.

The factors that influence the size of the child are: (1) Inheritance; (2) the age of the mother at impregnation, as older women, whose ova are also older, generally have heavier children; (3) special conditions during foetal life, such as disease or infection of the mother or foetus. Therefore, too much dependence should not be placed on diet treatment.

EHRENBERG.

Ylppö, A.: Icterus Neonatorum and the Secretion of Bile Pigment in the Foetus and New-Born
(Icterus neonatorum und Gallenfarbstoffsekretion beim Foetus und Neugeborenen). *München. med. Wchnschr.*, 1913, lx, 2161.

By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

The examinations were carried out by the author's own spectrophotometric method. In 11 children the excretion of bile pigment in the urine and stools was almost the same, regardless of whether they showed icterus or not; even in prematurely delivered children no more was excreted than was to be expected from their weights. In 58 children the bile pigment content of the blood was determined, in 10 cases repeatedly, and in 4 cases in the mothers also.

In the blood of the foetus and in that from the umbilical cord there was four to fifteen times as much as in the mother's blood. Children with a

high bile pigment content all had icterus; after delivery the content rose still higher, and when a certain limit was passed icterus appeared. There were some variations in individual cases, but the rule held good as a general thing. The bile pigment content was especially large in prematurely delivered children.

The chief cause of the trouble is to be found in the conditions of foetal life. The function of the foetal liver is not sufficiently developed, so a considerable amount of coloring matter is allowed to pass over into the blood. As the grade of icterus depends on how long this condition persists, this explains why icterus is not influenced by infections, and that even in syphilis it disappears at the usual time; and that it is entirely independent in septic diseases; it is purely of hepatic origin.

KERMAUNER.

Ballantyne, J. W.: Ante-Natal Hygiene. *Pediatrics*, 1914, xxvi, 13. By Surg., Gynec. & Obst.

The author's views as to how advances in ante-natal hygiene may be accomplished are in brief as follows: (1) Marriages should be contracted only after a clean bill of health is given on each side. (2) A diagnosis of syphilis in pregnant women should be made and the disease properly treated at once. (3) Stillbirths should be registered. (4) The sale of abortifacient drugs should be stopped. (5) The medical profession should take a more active part in the supervision of pregnancies. (6) Maternity hospitals should be furnished with pre-maternity or pregnancy wards for patients suffering from the diseases of pregnancy. (7) Help, financial and otherwise, should be provided to poor pregnant women. (8) Lastly the author speaks of the "hygiene of the honeymoon" and says that this may be better advanced by the education of those to be married.

EUGENE CARY.

Huntington, J. L.: Ante-Natal Hygiene; Relation of the Hospital to the Hygiene of Pregnancy. *Pediatrics*, 1914, xxvi, 19. By Surg., Gynec. & Obst.

The author tells of the work the Boston Lying-In Hospital has done in taking care of about 2,000 patients a year.

The quarters of this clinic are located in a tenement house opposite the Lying-In Hospital and are rented for \$300 a year. The patients to be confined in their homes come to this clinic at regular intervals until labor sets in. Patients living at a distance are visited by nurses. In the clinic the history, both social and clinical, is taken, and the urine is examined and blood-pressure taken. Palpation of the abdomen and measurements are made, after which the name of the patient is given to a nurse for house calls and the patient is instructed in the hygiene of pregnancy. If untoward conditions arise they are sent to the hospital.

It is the author's belief that an ideal pregnancy clinic could be run for \$1.16 per patient.

EUGENE CARY.

GENITO-URINARY SURGERY

KIDNEY AND URETER

Fowler, O. S.: Ureteral Obstruction Causing Urinary Stasis; a New Etiology in Kidney-Stones, with a New Method of Nephropexy to Secure Ideal Natural Drainage. *J. Am. M. Ass.*, 1914, lxii, 367. By Surg., Gynec. & Obst.

The ureter is supplied with muscular fibers which cause intermittent spurts of urine into the bladder, but the kidney and the upper portion of its pelvis have no musculature, therefore the kidney and pelvis must empty themselves by some other method.

When mankind assumed the upright position the normal kidney drainage suffered to this extent, that the lower calices are below the lowest part of the kidney pelvis as it leaves the kidney, thus leaving a portion in which there is urinary stasis; stasis invites infection, and infection and stasis cause the formation of stones. In favor of this observation is the fact that all substances in chemical or physical solution are hastened in precipitation by stasis; there are, however, occasionally stones in the kidney without infection.

The author's theory also accounts for the fact that the vast majority of kidney-stones are found in the lower pole or in the pelvis of the kidney. Stone in the upper pole is unusual and stone in the parenchyma is very rare. The author has therefore devised an operation in which the upper pole is drawn inward and downward and the lower pole outward and upward, so that the upper and lower calices are on a level where he fixes the kidney by slings of fascia removed from the fascia lata. The author believes that this method of fixing the kidney is better than other methods because no kidney parenchyma is destroyed.

Murard, J.: Value of Surgical Treatment in Bright's Disease (De la valeur du traitement chirurgical dans le mal de Bright). *Lyon chir.*, 1914, xi, 30. By Journal de Chirurgie.

Murard gives a severe but impartial critical review of the question of surgical intervention in chronic nephritis. From a theoretical and experimental study of the effects of decapsulation and nephrotomy and an examination of the cases published he draws conclusions frankly unfavorable to the method. It seems to him that it is only indicated in acute attacks caused by congestion of the kidney in the course of chronic nephritis; but in such cases the operation is more serious than its advocates admit and the results are not permanent. The nephritis itself has never been really cured by the operation.

The author cites three unpublished cases of

surgical operation for nephritis in the last stage, 2 cases by Leriche and one by Desgouttes. The patients were operated on during anuria or uræmic crises. In two of the cases unilateral nephrotomy was performed and in the third decapsulation of the right kidney and nephrotomy of the left was done. All three patients died after a few hours. The author admits that these cases do not prove anything in regard to the method, because of the desperate condition the patients were in; they died not because of the operation, but in spite of it.

CH. LENORMANT.

Walkup, J. O.: Hæmorrhagic Hypernephritis; with Report of Case. *J. Am. M. Ass.*, 1914, lxii, 531. By Surg., Gynec. & Obst.

The rarity of the above disease is shown by the fact that in 652 necropsies only one case was found. Walkup states that the etiology is unknown but suspicion is directed toward a fibrosed pancreas with a fatty degeneration or infiltration of the adrenal. The symptoms are sudden violent pain followed by the shock concomitant to hæmorrhage pressure-symptoms disturbing prominent nerve plexuses. Death follows within forty-eight hours.

He reports the case of a sergeant of the regular army, aged forty-three, in whom pulmonary tuberculosis was proven microscopically. He also had nodules in both epididymii, otitis media, tubercular laryngitis, and diarrhœa with symptoms of tubercular enteritis.

The treatment, which covered almost two years, was accompanied by a gradual loss in flesh and advancement of the pulmonary lesion. During his last month of sickness the predominating symptoms were diarrhœa and a severe pain in the right costal arch that on pressure radiated by way of the splanchnics to the right scapula; this was followed by a lesser attack in the upper left lumbar region that on pressure followed the left splanchnics. After an effort to leave his bed the patient had a fainting spell which was followed by severe lumbar pains radiating to both shoulders. Death took place in twenty minutes.

Post-mortem examination showed a severe hæmorrhage in the right suprarenal with a lesser one in the left; no tuberculosis was found in either adrenal, kidney, or small intestine; the advanced processes were found in the lungs and colon; there was no report of the genital tract. The adrenals microscopically showed fatty degeneration with hæmorrhage infarcts and periadrenal bleeding. Degeneration seemed more advanced in the parenchyma and the pancreas showed a fibrosis with hypertrophy of the islands of Langerhans. CHARLES E. BARNETT.

Keyes, Jr., E. L.: Concerning Apparent Cures of Renal Tuberculosis. *Surg., Gynec. & Obst.*, 1914, xviii, 214.
By Surg., Gynec. & Obst.

The author reached the following conclusions regarding apparent cures of renal tuberculosis.

The symptoms of renal tuberculosis depend rather upon the extension of the disease to the pelvis, ureter, and bladder, or to the perinephritic tissue, than to the lesion in the kidney itself.

2. Hence, tuberculosis may exist for some time in the kidney without causing any symptoms.

3. Hence, also, long periods of quiescence may occur, corresponding to aseptic occlusion of the tubercular lesion.

4. During this time no tubercle bacilli may be found in the urine, and the author's cases suggest that pathological examination of the tubercular kidney removed during a quiescent period might suggest the possibility of healing without total destruction of the kidney.

5. But relapse inevitably occurs and the kidney never ceases to be actively tuberculous until it is totally destroyed.

Belikoff-Schtomitsch: Diagnosis of Paranephritis (Zur Diagnostik der Paranephritis). *Med. Obozr.*, 1913, lxxix, 733.

By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author points out the difficulties in the classification of suppurations in the fatty capsule of the kidney, and does not regard the latest attempt at such a classification as conclusive, though he recognizes the anatomical research in regard to the distribution of the suppurations as authoritative. He emphasizes the importance of early diagnosis.

The following pain-points are pathognomonic: (1) Immediately below the anterior superior spine of the ilium, the point of exit of the cutaneous femoral nerve, and in the upper surface of the thigh, the distribution of the subcutaneous twigs of the same nerve; (2) above and in the middle of the crest of the ilium, the point of exit of the chief branch of the iliohypogastric nerve; and (3) above the posterior superior spine of the ilium, the point of exit of the ilioinguinal nerve. These three nerves run between the kidney capsule and the quadratus lumborum, therefore their involvement in the irradiation of pain in inflammations of the fat of the kidney.

These pain-points, which can establish a diagnosis of paranephritis in the very early stages when the lumbar region is not sensitive, are also of importance in the differential diagnosis of other retroperitoneal, especially retrocæcal suppuration. In retrocæcal suppuration the signs of psosis with bending of the thigh are characteristic. Besides these pain-points the temperature and a neutrophile leucocytosis are diagnostic signs in paranephritis. Three case histories of paranephritis and two of retrocæcal abscess are given, diagnosed in accordance with the above assertions and confirmed on operation.

STROMBERG.

Luzoir, J.: Albarran-Marion's Method of Nephropexy (De la néphropexie — procédé d'Albarran-Marion). *Thèses de doct.*, Par., 1913, Dec.

By Journal de Chirurgie.

Nephropexy is being abandoned by the majority of surgeons. Luzoir's argument for its retention is based on 35 cases. All of these cases were operated on by Albarran's method of utilizing flaps of capsule, modified by Marion so that the lower pole of the kidney is not entirely separated from the capsule. The latter forms a sort of hammock which holds the organ, and the fixation is performed higher up. The upper flaps of capsule are fixed above the eleventh rib. Surgeons are disagreed, not so much as to the method of operation, but rather as to the indications for it.

The end-results obtained by Marion are interesting. Luzoir got complete late reports on 28 patients; one case, which was a failure due to mistaken diagnosis, is excluded. The other 27 patients had pain in the kidney region; 6 of them seem to have had crises of renal strangulation. Of the 27, 15 were relieved from pain; 12 of them were improved but continued to suffer abdominal pain, and on examination the cause of this pain was found in the genital system once, in the appendix twice, in the gall-bladder once, in the stomach once, due to ulcer; 4 patients had enteritis and 3 movable left kidneys. Sixteen of the patients had nervous troubles: in 3 cases these troubles disappeared entirely; in 4 cases they were very much improved, 3 of these being neuropaths; in 6 cases they were improved—3 of these were neuropaths, one of extreme degree. In 3 of the cases there was no improvement; 19 patients had digestive disturbances, which in 6 cases disappeared entirely; 2 of these patients had appendectomies performed; one of them had enterocolitis.

One case was very much improved after a later appendectomy. Nine times there was slight improvement; two of these patients have chronic appendicitis and have not yet been operated on; in 3 cases there was no improvement. Among these 19 patients there were 3 cases of enterocolitis and 8 of appendicitis; 8 patients had general ptosis and 4 of them were benefited by the operation.

These results are very encouraging and they would have been better, as Luzoir points out, if the supplementary operations demanded by the patients' condition had been performed, such as colopexy, hepatoxepexy and appendectomy. These operations could have been performed at the same time as the nephropexy.

GASTON PICOT.

Post, W. E.: The Effect of Tartrates on the Human Kidney. *J. Am. M. Ass.*, 1914, lxii, 592.

By Surg., Gynec. & Obst.

The unfavorable results in experimentation on rabbits in the subcutaneous and by month introduction of tartrates—Rochelle salts—to prove renal destruction, especially of the convoluted tubuli, by Underhill, Wells and Goldschmidt, and later

corroborated on dogs by Pierce and Ringer, is denied by Post as not being true in the human kind where an ordinary dose of two or three drams is given. The smallest toxic dosage for a well-fed rabbit was ten grams of Rochelle salts to a 2,800 gram rabbit which would be equivalent to 6.7 ounces of salts to a 150-pound man — a dose that would, of its magnitude, be entirely too toxic to make any logical biological comparison.

Post refers to Fisher's plan of relieving the oedema of nephritis by alkalinizing the urine. His case reports following the use of 2 to 3 dram doses of Rochelle salts, as a rule, showed, by the hydrogen ion concentration, a lessened acidity. The majority of his cases reported were ones favoring albuminuria on account of the circulation being contaminated with bacteria, yet none of them showed an increased albuminuria, cylindruria, or in fact any unfavorable symptoms from the ordinary dosage of sodium and potassium tartrate.

CHARLES E. BARNETT.

Ware, M. W.: The Futility of Phenosulphonaphthalein as an Indicator of Renal Function. *N. Y. M. J.*, 1914, xcix, 416.

By Surg., Gynec. & Obst.

An attempt is made by the author to discredit the work of Rowntree and Geraghty, on phenosulphonaphthalein as a functional kidney test and to show that the drug when used for that purpose is valueless. He brings together many quotations from different workers with arbitrary arguments of his own in support of his contention.

According to Ware, phenosulphonaphthalein output is dependent upon urinary reaction and gives no true indication of the excretory ability of the kidneys but is purely an acidometric test. This conclusion is based upon the observation that the output of the dye is diminished in certain cases with alkaline urines and also in certain other cases with diuresis which "is identical with a diminished acidity," such as tuberculosis of the kidneys and interstitial nephritis. For "experimental refutation" is cited the observation of an increased elimination occurring after small doses of various irritants and, particularly, "in the presence of renal lesions caused by nephrotoxic immune serum." For "clinical refutation" several cases of fatal issue are quoted in which the prognosis had been adjudged good because of a good phthalein output. In conclusion he says: "As for the information being accurate and precise, this is controverted by the theoretical, chemical, experimental, and clinical evidence herein set forth and which forbids reliance on the extravagant claims of phenosulphonaphthalein as a functional kidney test."

FRANK HINMAN.

Beer, E.: Leukoplakia of the Pelvis of the Kidney and Its Diagnosis. *Am. J. M. Sc.*, 1914, cxlvii, 244.

By Surg., Gynec. & Obst.

The author reports from the literature forty-five cases of leukoplakia, and in addition two occurring in his own practice. Twenty-seven cases occurred

in the bladder, eight in the urethra, and the rest in the pelvis of the kidney. He claims that this type of change in the mucosa does not, as a rule, give rise to symptoms except where the particles in their exfoliation are large enough to produce a colic during their passage down the ureter. In almost every instance the condition was associated with either calculus, simple infection, or tuberculosis.

In the two cases in Beer's experience one was associated with tuberculosis and the other was a pyonephrotic condition. The process is an exfoliating one which, from the nature of the specimen studied, can only be an exfoliation from a surface of leukoplakia.

In the author's cases silicates were found in the urine, and it is of interest to note that these salts in the human body are found mainly in the skin appendages—for example, the hair and the nails. In the first instance the patient died from general peritonitis. Autopsy was obtained. The specimen of kidney showed the pelvis filled with white, pearly membrane attached to the underlying wall of the pelvis, extending down to the ureter; otherwise, the kidney was the picture of a tuberculous pyelonephritis. There was a tuberculous destruction of the papilla as well as tubercular foci in the cortex and in the lower half of the pelvis an area of leukoplakia of irregular shape. IRWIN S. KOLL.

Braasch, W. F.: Infections of the Renal Pelvis and Ureter. *Tex. St. J. Med.*, 1914, ix, 305.

By Surg., Gynec. & Obst.

The author considers pyelitis part of a general genito-urinary infection in which the active infection is confined largely to the pelvis of the kidney.

Cases may be divided into two groups: those due to ascending infection, the result of mechanical obstruction to the urinary tract, and those due to descending infection from the kidney or part of the pyelonephritis. The infection is more frequent in males than in females. The cause is unknown. It is nearly always bilateral. With pyelonephritis pus is nearly always found in catheterized specimens from both kidneys, but the infection may be temporarily inactive on one or both sides, as evidenced by the absence of pus and bacteria in the urine, and changes demonstrated by the ureteropyelogram may be the only positive evidence of bilateral infection. An absence of pus after a course of treatment would not necessarily indicate a permanent cure. It may indicate that the process is temporarily dormant.

Almost every case of pyelitis is accompanied by cystitis. In the male almost every case of cystitis shows evidence of past or present renal infection, except in cases due to urethritis, obstruction, or trophic disturbance. In the female, cystitis is not so frequently accompanied by pyelitis. The severity of the cystitis is no clue to the severity of pyelitis.

Pyelitis resulting from mechanical obstruction to the urine differs from that due to descending infection in that when the obstruction is removed the pyelitis will disappear unless considerable kidney

destruction has taken place. In the female, mechanical pyelitis is most frequently due to pregnancy. It is not extensive and clears up readily. Pain is not usually severe—when severe it may be the result of mechanical obstruction to urinary secretion, increase in intrarenal tension resulting from diffuse cortical infection or perinephritic infection. Mechanical obstruction is caused by occluding blood-clots or by cicatricial change about the pelvis and ureter subsequent to perinephritic infection. In long standing cases pain, chill, and fever accompanies sporadic acute infection of the adjacent parenchyma.

Pyelography is most useful in the diagnosis of pyelitis in ascertaining the degree of renal destruction and determining whether or not the condition is surgical. The author describes a number of abnormalities of the pelvis calyces and ureter brought out by the pyelogram.

The diagnosis of unilateral pyelitis from unilateral tuberculosis may be difficult if tubercle bacilli are not found in the urine. The cystoscopic findings may be the same. The pyelogram in pyelitis shows the outline of the pelvis usually well defined, indefinite in tuberculosis. Pyelitis is distinguished from infection of the parenchyma by the clinical picture in acute septic nephritis, and by the small amount of pus in the chronic infection of the parenchyma and by the amount of pelvic dilatation shown.

A radiogram should always be made when a catheterized specimen of urine shows pus, in order to eliminate stone. Reflex gastric symptoms are frequently present.

In ureteritis infection is usually secondary; it may result from descending infection and involve the whole ureter or it may be from localized infection, appendicitis, pelvic inflammation, vesiculitis, or cystitis, and is confined to a part of the ureter. When due to ascending infection the entire ureter is seldom involved. The ureterogram demonstrates the course and extent of the inflammatory process.

The author briefly describes the pathology of the inflamed pelvis and ureter. In the treatment of chronic pyelitis he thinks it best to use all three methods in conjunction, namely, urinary antiseptics, autogenous vaccines, and renal lavage; in cases of mechanical obstruction, removal of the cause. Nephrectomy is indicated for persistent unilateral pyelitis causing recurrent attacks of fever and weakness, and unilateral hæmorrhagic pyelitis. There is extensive inflammatory distention of the pelvis and destruction of renal tissue on one side, as may be seen with advanced pyelitis, ureteral obstruction as the result of peripelvic, and peri-ureteral cicatricial changes causing intermittent colic.

W. A. CERSWELL.

Adler, H.: Choice of Operation in Impacted Calculi of the Ureter (Du choix de l'intervention dans les calculs enclavés de l'uretère). *Thèses de doct., Par.*, 1913, Dec. By Journal de Chirurgie.

Adler's work is based on cases published with very little detail. He discusses the suitable surgical

procedures when the calculus is or is not complicated with anuria, when kidney-stone is or is not present, when the condition is primary or secondary, unilateral or bilateral, septic or aseptic, when there is at the same time a disease of the kidney independent of the calculus in the kidney of the same or the opposite side, etc.

It is impossible to follow the author in his discussion of all these pathological possibilities, but the conclusion to be drawn is that an exact knowledge of the functional condition of each kidney is absolutely necessary.

If the kidney is dilated, infected, or not functioning, the calculus becomes a secondary matter and nephrectomy is the operation of choice, but if it is only moderately dilated, has no calculus and is not infected, the ureteral calculus only is to be considered and its removal will considerably improve the condition of the kidney.

As a general rule when there is calculus of both the kidney and ureter a double operation is necessary, but patients have been known to recover after ureterotomy when a calculus was left in the kidney. If the calculus of the ureter is movable it may be pushed back to the pelvis and removed, together with the urine contained in the kidney, but if it is impacted this method cannot be used. The calculus of the ureter should be removed at one operation and a later one performed to remove the kidney calculus. When the affection is bilateral, the operation should be performed first on the least affected side.

In the question of anuria, Adler does not have any confidence in permanent catheters of the ureter, but prefers ureterotomy or nephrotomy; but the arguments he gives and the cases he publishes are not sufficient for the rejection of these two methods of treatment which are universally accepted.

GASTON PICOT.

Dalengen, R.: Therapeutic Applications of Catheterization of the Ureters (Contribution à l'étude des applications thérapeutiques du cathétérisme urétéral). *Thèses de doct., Par.*, 1913, Dec.

By Journal de Chirurgie.

Dalengen's thesis is a good general review of the question based on 38 cases, some of which are unpublished. Catheterization of the ureters is employed especially in non-tubercular congestion of the kidneys, post-operative renal fistulæ, and in some complications of renal lithiasis. As to renal infections, the author agrees with Périaneau that catheterization of the ureters followed by irrigation of the pelvis often cures recent pyelonephritis if there is no great degree of retention. It is only palliative in old infections, such as ascending pyelonephritis and hæmatogenous pyelonephritis of long standing, in extensive suppurations, such as pyonephroses, and in calculous pyelonephritis. In such cases irrigation cannot be expected to do more than secure a sepsis preparatory to operation. A post-operative renal fistula will generally close if a

permanent catheter is inserted in the ureter, and the author's cases confirm the results obtained by Albarran. The catheter, left in position, drains the lower part of the kidney, straightens out curves in the ureter and dilates constricted parts just as a permanent catheter dilates a constricted urethra.

In renal lithiasis catheterization of the ureters is indicated in three cases. In nephritic colic which lasts abnormally long, or in the recurrent forms, the catheter left in position dilates the passage and sometimes allows the expulsion of gravel. The same thing is true if calculi are arrested in the ureter above a constricted point. He reports nine cases. In calculous anuria bilateral catheterization has given remarkable results in 2 cases.

Dalengon confirms Eliot's conclusions in this respect. Whatever the reason for performing catheterization of the ureters three rules, must always be observed: (1) The catheter must be passed slowly and gently; (2) the permanent catheter must never be left in longer than 48 hours; (3) during this time the pelvis and bladder should be irrigated several times a day with antiseptic solutions.

GASTON PICOT.

BLADDER, URETHRA, AND PENIS

Gérard, M.: Injuries of the Bladder by Impalement (Des blessures de la vessie par empallement). *J. d'uro.*, 1913, iv, 549. By Journal de Chirurgie.

If an individual falls and is impaled on some object the bladder is more apt to be injured if it is full and if the object is oblique from behind forward. In man the point of entry may be through or near the anus. This is much the more frequent, including 85 per cent of the cases; in such cases both rectum and bladder are injured. If the point of entry is through the perineum or scrotum, the bladder alone is involved.

In the first class of cases the injury to the rectum may be variable in extent and severity. The prostate is rarely involved, only 2 cases being reported, and lesions of the ureter and seminal vesicles are also rare; but if the injury involves the peritoneum the intestine may be perforated. Out of 63 cases the peritoneum was involved 23 times, or in 36 per cent of the cases. Cases of the second class are rare; in 9 the foreign body penetrated through the perineum, in 2 behind the scrotum. The injury is generally at the base of the bladder or in the lower part of the posterior wall, and the membranous urethra is often torn.

In woman the most frequent lesion is injury of the bladder through the vagina; the posterior surface of the bladder is injured and the anterior vaginal wall perforated. The peritoneum is rarely involved; Witzel observed one case with injury of the intestine. Injury through the rectum is very rare in women, the author having found only three cases. Such injuries are more severe than the vaginal cases because the rectum is also involved.

As regards the symptoms, the pain is variable

in intensity and hæmorrhage is generally abundant. If urine flows out through the wound it shows that the bladder is perforated, but this may not occur for some hours or even days after the accident, either because of anuria, or of retroperitoneal infiltration of the urine, or because the edges of the wound are sealed up with clots; so that it is not safe to conclude that the bladder is intact if urine is secured on catheterization. The urine may be discharged continuously, through perineal or vaginal wounds, or it may accumulate in the ampulla of the rectum and be discharged only every two or three hours in the form of a liquid stool, if there is a vesicorectal wound and the anus is intact. If the anus is torn there will be continuous discharge of urine and fecal matter. Injury of the rectum may be manifested by discharge of gas and fecal matter through the urethra. Symptoms of peritonitis appear if the peritoneum is involved. The lesions at the point of entrance do not give any idea of the extent of injury to the bladder, rectum, and peritoneum. The extent and form of the lesions are disclosed by rectal palpation and whether there are perforations of the rectum and bladder. Catheterization of the ureter may reveal an injury to the ureter, and the injection of air into the bladder shows whether the peritoneum is involved. Rectoscopy is a valuable aid in the diagnosis.

The course depends on whether the injury is intra- or extraperitoneal. Death resulted in 85 per cent of the cases of peritoneal involvement, generally after 14 to 36 hours, but sometimes as long as 10 days afterwards; surgical treatment, however, has since lowered this mortality to 20 per cent. The prognosis is favorable in extraperitoneal cases, the immediate mortality being barely 5 per cent, micturition by the natural route generally being reestablished completely, although if the urethra has been involved there is apt to be stricture as a sequel. The point of first importance is the often difficult problem of finding whether the peritoneum is involved or not. The bladder should be catheterized at once. If the patient has not urinated for several hours, if the bladder is empty and the urine has not collected along the course of the wound, it is reasonably certain that there is an intraperitoneal penetration of the bladder. Insufflation of the bladder will reveal it. If the urine withdrawn by the catheter is clear it is probable, but not certain, that the bladder is intact; if the urine is bloody it is doubtful. In such cases the patient must be carefully watched for the very first signs of peritonitis. Perforation of the peritoneum being excluded, the next thing is to determine whether it is the ureter or bladder that is injured. Catheterization of the ureter will determine this.

Early complications are hæmorrhage and infiltration of the urine into the retroperitoneal or pelvic cellular tissue; secondary ones are infection, the formation of a retrorectal phlegmon, cystitis, ascending pyelonephritis, orchitis, and epididymitis; late ones, veritable sequelæ, are fistulæ and foreign

bodies in the bladder; these are often fragments carried into the bladder by the point of the injuring object, sometimes bits of the object itself, more rarely remains of food or intestinal parasites from the ampulla of the rectum. They may be discharged, or, remaining in the bladder, may cause persistent fistulæ or give rise to secondary phosphatic calculi. Vesical fistulæ occur in 16 per cent of the cases, they may continue indefinitely or they may close after 8 to 14 months; the removal of foreign bodies hastens their closing.

Perforation of the peritoneum demands as early operation as possible. This consists of laparotomy, suture of the bladder and rectum, removal of foreign bodies, careful cleansing of the peritoneum, and drainage. In extraperitoneal injuries expectant treatment is the rule, except when a foreign body is retained in the wound, or there are complications due to the size or irregular form of the injuring object. Then, under anæsthesia, a careful toilet of the wound should be made, and a permanent catheter inserted for removal of the urine. Complications will often necessitate secondary surgical operations, such as the evacuation of collections of pus by the hypogastric or perineal route, removal of calculi, closing of fistulæ, etc. J. TANTON.

Gourliou, P.: Calculi of Diverticula of the Bladder (Étude sur les calculs diverticulaires de la vessie). *Thèses de doc.*, Par., 1913, Dec.

By Journal de Chirurgie.

Calculi of this kind may be lodged either in congenital or post-operative diverticula of the bladder. They may descend from the kidney and become lodged in the diverticulum where they may increase in size, but more generally they are found in infected cases and are phosphatic. They may increase in size together with the diverticulum in cases of retention, or they may originate in the interior of the diverticulum by the concretion of salts from an infected urine. The symptoms are the same as those of movable calculi.

The lithotrite does not give as clear a sound because the stone is partly buried, but rectal palpation often gives more exact information because the calculus is not pushed away by the finger. Cystoscopy, which may or may not be supplemented by radiography of the bladder after it is filled with collargol, is the only way of getting exact information as to the condition, the size and number of the calculi, and the degree of stricture of the neck of the diverticulum.

Lithotripsy cannot be used as a means of treatment for these calculi; section is the operation of choice. If the calculus is large and friable it can be crushed while in position with the fingers, forceps, or a lithotrite. If it is small, the neck of the diverticulum may be dilated with forceps. If neither of these procedures is possible, the diverticulum must be incised. Prostatectomy is indicated as a supplementary operation, for these calculi are generally associated with retention. GASTON PICOT.

Marion, G.: Resection of Diverticula of the Bladder (De la résection des diverticules vésicaux). *J. d'uro.*, 1913, iv, 785. By Journal de Chirurgie.

The removal of subperitoneal diverticula is simple when they can be reached and invaginated like the finger of a glove, but it is often difficult when they are located laterally or posteriorly and the walls are adherent to neighboring tissues.

Marion had a case in a young man of 18. Cystoscopy showed an orifice on the right lateral wall of the bladder, and radiography, after filling the bladder with collargol, showed two cavities of almost equal volume, lying beside each other. He recommends the following technique:

Catheterization of the ureter on the side of the diverticulum, either before the operation through the cystoscope or during it through the opened bladder.

2. Suprapubic incision: opening of the bladder and finding the location of the diverticulum with the finger.

3. Dissection of the bladder on the side of the diverticulum, till the pedicle of the diverticulum is reached.

4. Incising the bladder wall up to the orifice of the diverticulum.

5. Dissection of the diverticulum: one or more fingers are introduced into it and it is isolated like the sac of a hernia; a ureteral sound should be introduced to protect the ureter.

6. Resection of the pedicle of the diverticulum.

7. Repair of the bladder wall by suture in two stages, one involving the whole wall without penetrating the cavity of the bladder, the other involving only the muscular layer.

8. Partial closing of the bladder with drainage of the bladder and perivesical space. The perivesical drain is removed when the discharge becomes negligible, and the bladder drain removed a few days later and replaced by a permanent catheter until the bladder is closed. J. TANTON.

Heitz-Boyer, M.: Mixed Treatment of Certain Tumors of the Bladder (Du traitement mixte de certaines tumeurs vésicales). *J. d'uro.*, 1913, iv, 793. By Journal de Chirurgie.

The endoscopic treatment of tumors of the bladder by high frequency currents, electrocoagulation (Beer), or electric sparks (Heitz-Boyer and Cottenot), is at present very much in favor. Besides obviating bloody operations it has the advantage of allowing the pedicle to be treated more completely and surely. However, when the tumors are large the procedure is long, delicate, difficult, and fatiguing, so for such cases Heitz-Boyer proposes a mixed surgical and endoscopic treatment.

The first step consists of a hypogastric incision; the tumor being revealed, a clamp is placed on the pedicle, a ligature is formed below the clamp and the pedicle cut between them. The bladder is incompletely closed and drained; healing takes place by second intention. The operation may be

done under local anæsthesia; 15 days after the bladder is closed the second stage is undertaken, that is, the endoscopical destruction of the remnant of the pedicle by a high-frequency current. A series of cystoscopies are performed to complete the destruction of the pedicle and to prevent recurrence. The author has made use of this procedure in two cases successfully.

J. TANTON.

McDonald, S., and Sewell, W. T.: Malakoplakia of the Bladder and Kidneys. *J. Pathol. & Bacteriol.*, 1914, xviii, 306. By Surg., Gynec. & Obst.

Because of the extreme rarity of the condition, the authors presented their case of the above to the Pathological Society of Great Britain and Ireland in 1912.

The patient, a young married woman, aged 24, had been confined five months previously, after which time she had been in bed continuously. Three months later an abscess formed in the right flank. This was not opened, but seemed to have disappeared although after that there had been pain in the right flank. Later there had been severe pain in the right flank and in the vulva at the end of micturition. There was increased frequency of micturition but there was no history of hæmaturia or of the passage of calculi; there was rapid emaciation. The patient had a severe rigor a few days before admission to the infirmary. A fluctuating swelling was found in the left ilio-costal space; there was pyuria and the temperature was 99° F. The abscess was opened and 15 ounces of foul pus evacuated, containing bacillus coli. On the sixth day the temperature rose to 101.4° F., and reached 103.6° F. on the eighth day, when she died.

At the post-mortem examination there was found recent acute pericarditis and a right pleural empyema containing about a pint of thin greenish pus. There were patches of bronchopneumonia in the lower lobe of the right lung. A recent operation wound in the left flank led down to a perinephric collection of pus. There were dense inflammatory adhesions between the capsule of the kidney and surrounding structures. Throughout the kidney substance numerous yellowish white deposits were found, varying in size from a pin-head to a third of an inch in diameter. The deposits were firm and elastic; some had hyperæmic centers and some showed points of suppurative softening; in places they occurred in clusters and tended to fuse together. In one large deposit the greater part was grayish in color, and strongly resembled the "wash-leather" center of a gumma. The nodules were largest near the surface of the kidney and they almost entirely replaced the kidney substance in the lower pole.

The renal tissue was bright pink in color, and even the parts free from the larger deposits showed minute points and streaks of infiltration through the medulla into the cortex. The apices of the papillæ showed nodular infiltration with hyperæmia on the surface. The pelvis of the kidney showed slight granularity of the mucosa. The right kidney

showed a similar condition, but the deposits were not so numerous nor so large. One mass of fused nodules contained irregular cavities filled with pus, and the surface of the kidney appeared to have been infected from it. The arrangement of the lesions on this side was more suggestive of an ascending infection. There was superficial erosion of the papillæ with whitish infiltration running in lines into the cortex and the ureters were slightly dilated and thickened. The bladder was slightly dilated; at the trigone and surrounding the opening of both ureters were numerous small rounded nodules raised above the mucosa, averaging about one-eighth of an inch in diameter. The nodules were closely set, and extended up the posterior wall almost to the fundus. The individual nodules were semitransparent and grayish in color with a more opaque white center, and were surrounded by a hyperæmic zone. In places they coalesced so that the mucosa was covered with yellowish white sheets of deposit in areas up to an inch in diameter. The other pelvic viscera showed no abnormality.

The culture developed a pure growth of *B. coli* communis. Lesions found in the kidney and bladder were identical. The impression conveyed by microscopical study was that an essentially new formation with a peculiar type of cell was being dealt with and that there were secondary changes present, partly degenerative and partly the result of an inflammatory condition associated with the presence of *B. coli* communis.

The secondary elements are classified by the authors as follows: (1) The large, peculiar, and characteristic cells hereinafter referred to as the large cells — malakoplakia cells of Von Hansemann; (2) certain free and intracellular bodies which have been seen in the other recorded cases and which will be spoken of as the Michaelis-Gutmann bodies, after the authors who first described them; (3) leucocytes, cells of lymphocyte series, and fixed cells; (4) stroma and blood-vessels; and (5) bacteria.

The large cells were found in the submucosa, the epithelial lining of the viscus being raised above the level of the mucous membrane by these formations. The individual cells are quite unlike any seen in inflammatory reactions. Healthy looking unaltered cells present the following appearance: They resemble liver-cells or, rather, cells of the suprarenal cortex; where lying closely, they are round or oval, but in denser portions they are polygonal; they are about 20 μ in diameter; degenerative changes are apparent.

Michaelis and Gutmann bodies were found scattered throughout the deposits of large cells, numerous bodies of very peculiar and characteristic nature. They were most numerous inside the large cells and a large number were found toward the periphery.

Scattered throughout the lesions were numerous polymorphonuclear leucocytes, some well preserved but many obviously degenerating. Many lymphocyte cells were present; they were also most

numerous at the margin of the deposit; and in the bladder they were found in the submucosa. At the margin of the deposits entirely different kinds of cells were found; they were spindle-shaped and looked like fibroblasts. The impression was that these fibroblastic cells were merely acting as phagocytes.

Stroma seemed to be present in small amounts in the large cells; in other places thin-walled blood channels were present—sometimes they were sinusoidal in distribution. The blood-vessels seemed to be of rather incredible number and appeared like blood-vessels in inflammatory tissue.

Studies for bacteria and spirochaetes were made but no other organisms were discovered, except the *B. coli communis*.

The authors refer to the cases described by Von Hansemann, Michaelis, Gutmann and Loele in 1910, and Hedren in 1911.

Regarding the etiology, little is known. Kimla suggested that they might be tubercular, but nothing of this character has been proven.

A fact that has been brought out in the table is the frequency of the condition in females. In many cases there has been an entire absence of any urinary symptoms and in the wide distribution of lesions throughout the urinary tract this fact seems peculiar.

The author's case is of special interest from the fact that the woman was only 24 years of age, and that the kidneys, bladder, and ureters were affected.

There is no uniformity of opinion in regard to these large cells of Von Hansemann. Schaudinn could find no evidence of parasites in them. The most popular view as to their origin is that they are directly derived either from endothelial cells lining the lymph-spaces in the tissues, or granulating tissue, or from granulating tissue cells. The authors suggested that possibly they may have something to do with adrenal rests. The Michaelis-Gutmann inclusions present extraordinary diversity of opinion in regard to their origin. Michaelis and Gutmann saw in them a distinct resemblance to Leyden's "bird's-eye"-like bodies, but Von Hansemann could see no such resemblance and seemed to think that they were not of parasitic origin. Loele considers apparently that they may be derived from the red blood-cells. The authors consider them to be a product of cell inclusions and cell products saturated with blood pigments. The bacteria always present so far have been *B. coli communis*.

The authors' observations do not, at the present, permit of an absolutely definite conclusion as to the nature of this affection. While the bacillus *coli communis* is constantly present in all reported cases, yet it is found so much more frequently in the urinary tract that it is only exceptionally that it could cause such a condition; it may, therefore, be only secondary. Their studies suggest that the real cause may be due to certain cell nests of developed mental origin which are stimulated to activity with associated specific degenerative changes. This theory also has its objections.

The authors think the name is an unhappy one, but was chosen by Von Hansemann from two Greek words meaning "soft" and "plaques," thus suggesting a relationship with leucoplakia. All agree that from whatever source these cells come they are not the derivatives of the superficial cells of the mucosa, thus making the term inapplicable.

A. C. STOKES.

Bauereisen, A.: An Unusual Parasite of the Female Bladder (Ein seltener Parasit der weiblichen Harnblase). *Ztschr. f. gynäk. Urol.*, 1913, iv, 174. By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

A 57-year-old woman had had pain and then fever; for three weeks there had been a swelling in the left lower quadrant, which ruptured externally and discharged pus. The cystoscope showed a perforation of the posterior bladder wall and a living ascaris which was seized and extracted. The patient grew worse with symptoms of pyæmia and died of embolism. Autopsy showed dense bands of adhesion between a loop of small intestine and the bladder, perforation of the bladder into an encapsulated abscess cavity of the left pelvic peritoneum, chronic pelvic peritonitis, and adhesive bands.

Bauereisen assumes that as a result of the numerous deliveries (12), pelvic peritonitis occurred, which led to the formation of adhesive bands between the intestine and bladder; the ascaris then penetrated the adherent loop and the adhesion and finally got into the bladder.

COLMERS.

Paoli, G.: Cystitis with Incrustation (Des cystites incrustantes). *Thèses de doct.*, Lyon, 1913, Nov. By Journal de Chirurgie.

In this form of cystitis there are two sorts of lesions of the bladder: (1) a calcareous incrustation which may cover its whole surface and which may be of urates, but is generally of phosphates or mixed; (2) destruction and necrosis of the mucous membrane and leucocytic infiltration of the different muscular layers, causing the disappearance of elastic and muscular fibers. There is arteritis and thrombosis of the veins. The process ends in extreme hypertrophy of the bladder walls and reduction of the capacity of the organ, sometimes to as little as 25 to 30 ccm. The bladder loses contractility and capacity for dilatation. Paoli shows that these lesions may be observed in any bladder infection; even in tuberculosis there is no specificity. Clinically the affection resembles any other kind of cystitis. The extreme degree of hæmorrhage and pain may lead one to suspect incrustation, and cystoscopy is the only method of examination by which an exact diagnosis can be made. The prognosis must be guarded on account of the frequency of renal complications.

There are two methods of treatment: cystostomy and ionization. Rochet makes a hypogastric incision, removes the incrustations with the finger or the curette, and ends with a superficial curettage of the whole bladder. Zuckerkandl performs a more

extensive operation in which the lesions are removed with scissors and a sharp curette. The ulcerations are removed like a new-growth, the openings brought together with catgut sutures, and the whole bladder cavity touched with tincture of iodine. In the female, curettage may be performed through the urethra.

The author reports cases of both these methods of operating, each of which seems to have its value, although there may be recurrence. He considers ionization the treatment of choice, using a lithium solution for uric incrustation and a chlorinated one for phosphatic incrustation. GASTON PICOT.

Buerger, L.: Simple Ulcer of the Bladder (Ein Beitrag zur Kenntnis vom Ulcus simplex vesicæ). *Folia urol.*, 1913, vii, 543.
By Zentralbl. f. d. ges. Gynäk. u. Geburtsh. s. d. Grenzgeb.

From the study of his own cases Buerger distinguishes two kinds of simple ulcer of the bladder, the superficial and the deep-seated or chronic callous ulcer. These so-called simple ulcers are of course to be distinguished from diseases of the bladder caused by specific inflammations, such as tuberculosis or syphilis, as well as from new-growths. The correctness of this assumption is confirmed by cystoscopic and pathological anatomical examinations. The clinical symptoms are intense dysuria and frequent desire to urinate; there is blood and pus in the urine.

The chronic ulcers are generally located in the region of the trigone. In spite of the fact that they are called solitary ulcers, there are apt to be at other places on the bladder mucous membrane, one or more secondary superficial erosions.

The quickest and most effective treatment is excision of the ulcerated parts of the mucous membrane by means of an operative cystoscope designed by the author and with forceps having cup-shaped points. In all cases of chronic cystitis with the symptoms described above a careful examination should be made for simple ulcer; the chronic cystitis and the very sensitive contracted bladder are only secondary symptoms which disappear when the primary ulcer is cured. DENCKS.

GENITAL ORGANS

Dorrance, G. M.: A Transverse Incision for Operation on the Scrotum. *J. Am. M. Ass.*, 1914, lxii, 451.
By Surg., Gynec. & Obst.

The author describes a transverse incision for shortening of the scrotum. He claims that this incision is favored by the direction of the arteries and nerves at the end of the scrotum, and may be made between the vessels; in this way a larger portion of the scrotum may be removed. Likewise the cremasteric muscle is shortened, a result not obtained by the longitudinal incision transversally sutured. The author claims that this method produces a much better closure than the longitudinal incision. A. C. STOKES.

McGlannan, A.: The Conservative Treatment of Undescended Testicle. *J. Am. M. Ass.*, 1914, lxii, 691.
By Surg., Gynec. & Obst.

Among the older writers the subject of non-descent of the testicle was treated chiefly from the standpoint of the tendency to the development of malignant disease; consequently the only operative procedure considered was the removal of the organ. Further study has shown that malignancy is a less frequent condition than was formerly supposed, and occurs nearly always in inguinal retention. Special interest is now centered in the functional power of the organ in an abnormal position, the likelihood of improvement of function if transplanted to the scrotum, and the possibility of effecting such transplantation.

The abnormally placed testicle tends to remain immature, or if spermatogenesis does take place, to undergo senile atrophy early. It seems probable that placing the testicle in the scrotum early in life enables infantile organs to develop normally, while the performance of the operation after puberty, though not necessarily doomed to failure, is less likely to be beneficial.

McGlannan has performed the operation on 16 patients, in none of which was there atrophy of the testicle — though in several it was necessary to divide the spermatic vessels — and the transplanted organs have invariably remained in the scrotum.

S. W. MOORHEAD.

Schäfer, A.: Technique of Orchidopexy (Zur Technik der Orchidopexie). *Zentralbl. f. Chir.*, 1913, xl, 1630.
By Zentralbl. f. d. ges. Chir. u. i. Grenzgeb.

The author has not always had the best results with Witzel's method of orchidopexy, so he has combined it with Longard's. His operation in unilateral cryptorchism is as follows:

The spermatic cord and the testicle are exposed and the cord stretched; the abdominal ring is closed by Bassini's method; the ectopic testicle is pushed over toward the sound side through a slit in the septum of the scrotum and the two testicles are fixed to each other by a few silk-sutures. A silk-suture is passed through the lower pole of the ectopic testicle, both ends passed through the skin of the scrotum on the sound side and left hanging; then both testicles are displaced toward the normal side, the slit in the septum is closed up as nearly as possible, and the cord of the ectopic testicle fastened to the external inguinal ring. After closing the skin wound, slight traction is exerted on the silk-suture that was left hanging and it is sutured to the thigh of the normal side. The wound is carefully dressed to avoid infection, and after ten days' rest in bed the sutures in the scrotum are removed.

In bilateral cryptorchism the procedure is the same, only the displacement of the one testicle toward the other side is omitted. The sutures on each side are fixed to the thigh of the opposite side.

DENCKS.

Codman, E. A., and Sheldon, R. F.: The Prognosis of Sarcoma of the Testicle. *Boston M. & S. J.*, 1914, CLXX, 267.

By Surg., Gynec. & Obst.

The authors report a case of sarcoma of the testicle which was first diagnosed as tuberculosis of the epididymis. When first seen the tumor was small, apparently involving the epididymis only, and small nodules were present in the other epididymis and one seminal vesicle. As there was also a quiescent focus in the apex of one lung, this diagnosis was agreed upon by two genito-urinary and two tuberculosis specialists. At the end of 9 months, however, the tumor had increased to the size of a small lemon. Orchiectomy was performed, the growth proving to be a sarcoma, replacing the epididymis, with a portion of the testis, compressed to one side, remaining. The sarcoma had not penetrated the tunica albuginea.

After mentioning the later views as to classification of testicular tumors as expressed in the articles of Chevassu and Ewing, namely, that they are all embryomata, the authors discuss the prognosis of the disease and report the end-results of 64 cases occurring at the Massachusetts General Hospital during the past 40 years. Of the cases operated upon the mortality was 58 per cent — deaths due to metastasis.

The cases of recurrence after operation all lived less than three years. The only operation performed was orchidectomy. Of 33 operated cases which died from the disease, 21 had no sign of metastasis at operation, yet death occurred in all within three years. These figures agree with Chevassu's, showing that a patient is safe only after the three-year limit.

As to operative measures, the authors believe that where there is evidence of metastasis, the dissection of the abdominal lymphatics and glands involved, as advised by Chevassu, Watson and Cunningham, and others is justified.

HORACE BINNEY.

Goodman, A. L.: Tuberculosis of the Testicle. *Med. Rec.*, 1914, LXXXV, 146.

By Surg., Gynec. & Obst.

The author deals principally with tuberculosis of the testicle in young children, and in a collective series of 91 cases of different authors about one-half occurred during the first two years of life. Heredity plays the principal part in the etiology.

The author cites several cases in children between the ages of six months and two and one-half years. He states that testicular tuberculosis may appear either as a primary isolated manifestation or as a secondary complication in the course of visceral tuberculosis. Primary tuberculosis is, at the same time, very restricted, unilateral, and not extending above the inguinal ring, it spares the better portion of the vas deferens, the seminal vesicles, and the urinary organs. Hence, it is essentially curable, does not especially involve the epididymis, as in adults, nor is it essentially testicular, but involves both the testicle and the epididymis,

blending the organs into a pathological mass in which the primary infected organ can no longer be distinguished. Macroscopical examination shows that the mass, which is at first diffuse and indistinctly outlined, has a certain tendency to become encysted; the connective tissue which proliferates in the vicinity may even filtrate the gland in its entire extent, and atrophy through testicular sclerosis is often the outcome of the infection.

In other cases the tubercular nodule suppurates, as in adult cases, it is adherent to the skin, then a fistula opens at the exterior, at the level of the tail of the epididymis, as is the rule in tuberculous fistulæ; more rarely, other forms of tuberculosis are observed, such as tubercular granulation or nodules scattered in the thickness of the gland; granulations or nodules in the head or tail of the epididymis. The vas deferens is often involved, but although it becomes indurated, as in adults, it is attacked only in the lower segment which is still enclosed in the scrotum.

The tunica vaginalis is often the seat of a more or less profuse exudation; in other cases, the two layers have become adherent through a plastic process forming a shell, as it were, around the genital gland. Secondary testicular tuberculosis is usually more extensive and no longer a manifestation of an infection through the blood.

In certain patients the infection is propagated through the lymphatic group or by the vaginoperitoneal canal. An ascending infection through the vas deferens is rather doubtful; the lesions are sometimes bilateral in these cases and the seminal vesicles or the prostate are apt to be the seat of indurated nodules or even suppurative foci. Clinically, these changes begin with acute symptoms, or they may be chronic from the start. The chronic types are essentially indolent, and their existence is only revealed accidentally or by the appearance of abscess and fistula. According to all writers, the primary forms are relatively benign in character, whereas the remote results of the secondary group are extremely unfavorable and the invasion of the testicle is here interpreted as a sign of profound intoxication of the organism, indicative of a fatal outcome.

CLARENCE R. O'CROWLEY.

Bugbee, H. G.: Further Observations on the Use of the High-Frequency Spark for the Relief of Prostatic Obstruction, in Selected Cases. *Med. Rec.*, 1914, LXXXV, 293.

By Surg., Gynec. & Obst.

The author reports four additional cases of benign obstruction and four of carcinomatous prostates (making in all 22 cases) which he has treated by the high-frequency spark. He classifies the cases of benign prostatic obstruction suitable for this method of treatment as follows:

1. Small fibrous prostates, forming a hard ring about the bladder neck, not only constricting the interureteric orifice, but interfering with the function of the internal vesical sphincter.

2. Enlargement of the median lobe unaccompanied by lateral lobe enlargement.

3. Lobes left after incomplete prostatectomy.

4. All enlargements where operation is refused, or contra-indicated by the condition of the patient.

A one-tenth inch spark is used and the tissue destruction extends about one-fourth of an inch below the surface. The case reports show that after a course of treatment some of the patients completely empty their bladders.

B. S. BARRINGER.

Bryan, R. C.: Prostatic Hypertrophy, and Its Relief by Surgical Measures. *Virg. M. Semi-Month.*, 1914, xviii, 525. By Surg., Gynec. & Obst.

After a discussion of various factors in etiology and symptomatology, and a review of several methods of prostatic removal, Bryan concludes that the following are essential in the proper care of prostatic enlargement:

1. Careful and not too hasty preparation of the patient for the operation, from one to several weeks if necessary.

2. The two-stage operation in infected cases and in cases of loss of cardiac and renal compensation, the cystostomy always being done under local anæsthesia.

3. High vesical incision.

4. Care about the space of Retzius.

5. Intra-urethral enucleation always by choice, the only instance where it cannot be done being in the marked case of contracture of the neck. The mucous membrane over the most prominent part of the gland is incised and the removal carried out.

6. No packing of the prostatic cavity.

7. No urethral medication, irrigation, or instrumentation.

8. Syphonage by double flow catheter which is kept up two to three days.

9. Proctoclysis.

10. Encourage the consumption of liquids and food.

11. The patient should be allowed to stay in bed ten days or more.

J. S. EISENSTAEDT.

Freyer, P. J.: Cancer of the Prostate. *Urol. & Cutan. Rev.*, 1914, xviii, 69.

By Surg., Gynec. & Obst.

Freyer reports 1,276 cases of enlarged prostate of which 171, or 13.4 per cent, were due to malignant growth.

The symptoms of malignant disease of the prostate are similar to adenomatous enlargement with other symptoms superadded. Among the symptoms are the rapid development of obstructive symptoms during a few months, especially in patients under 50 and over 70 years of age; progressive loss of weight; a feeling of lassitude, debility and undue fatigue, anorexia, pains in sacrum, loins on one or both thighs, along course of urethra or in the perineum; and pain and soreness in one or both buttocks when sitting down, due to pressure on nerves.

Freyer considers hæmaturia a more frequent complication of adenomatous enlargement of malignant disease. Physical examination shows a marked hardness of the prostate, with irregular outline, ill defined lobes, and partial or total obliteration of the median furrow. The most characteristic feature is the immobility of prostate from surrounding structures; palpation usually elicits much pain.

As regards treatment Freyer states that in advanced cases of carcinoma of the prostate it is quite impossible to effectively remove the gland and ameliorative treatment only can be considered. However, when the prostate can be removed *in toto* while the malignant disease is confined within the true prostate capsule, then a perfect cure can be looked forward to. The operation is attended with no more danger than in cases of simple hypertrophy.

J. S. EISENSTAEDT.

Legueu, Morel, Marion, Thévenot, and Gayet: Surgery of the Prostate (Contributions à la chirurgie de la prostate). *Cong. de l'ass. franc. d'uro.*, Paris, 1913, Oct. By Journal de Chirurgie.

An entire session of the recent French Congress on Urology was devoted to a discussion of the surgery of the prostate. A résumé of some of the papers read follows:

LEGUEU and MOREL discussed the clinical value of eosinophilia in prostatic cases. In studying the blood of 85 patients with various diseases of the prostate these authors noted that the leucocyte count varied according to the nature of the disease. They noted especially the increase in the eosinophile count in 90 per cent of the cases of adenoma. Independent of the effect of any parasite, toxi-infection or medicine, this eosinophilia averaged 5 per cent in cases of adenoma of the prostate which were not infected and did not show hæmaturia. It was apparently due to the adenomata, for it disappeared after the operation, and moreover, histological examination of the adenomata showed, in the zone surrounding the urethra, an abnormal proportion of eosinophiles. Although the eosinophilia in prostatic cases is not a specific reaction, it has a real diagnostic value. It may settle the question of differential diagnosis between a neoplasm and an adenoma, and reveal in "prostatic cases without a prostate," the presence of minute adenomata, which clinically would be unsuspected.

MARION reported having practiced suprapubic prostatectomy in six cases of chronic prostatitis which had been treated for a long time by all other means without any results. The technique he described of these operations is not like that for hypertrophy. The neck is not removed, but only the two inflamed lobes of the prostate. The bladder is opened and an exploration made behind the neck of the bladder for the two more or less pronounced projections under the bladder wall which represent the two lobes of the prostate. Where necessary a finger in the rectum aids in the

examination. Then an incision is made with a bistoury in each of these projections, starting from the neck and directed obliquely backward and outward, passing through the bladder wall. Then the finger is introduced into each of these incisions and the prostatic lobes are dissected and removed. This, he claims, is comparatively easy and he thinks it is a mistake to suppose that a prostate that is not hypertrophied cannot be removed by dissection. There is a point on the anterior surface representing the excretory pedicle of the lobe that has to be torn free. The lobes are about the size and form of smooth, symmetrical almonds, except at this point on the anterior surface.

Marion's post-operative treatment is the same as after prostatectomy for hypertrophy. With one of the patients, who was 32 years old and had had complete retention for several months, the result was perfect. The other five had the usual symptoms of chronic prostatitis, neurasthenia, and discharge. In three cases the results were perfect: there was cessation of pain, discharge, and neurasthenic symptoms. In two cases the results were incomplete: the discharge stopped but pain and neurasthenic symptoms persisted. The effects on the genital functions were as follows: Erection and sexual sensation were normal, but in two patients, who were examined closely, there was no ejaculation; the other patients were not sure in regard to this point. This is a serious consideration in young patients, and it is generally they who are afflicted with chronic prostatitis. If the removal of the lobes of the prostate in this way does render the patient sterile, it could only be used in special cases where all other methods of treatment had absolutely failed, and the patients should be told of it beforehand.

THÉVENOT discussed the difficulties of diagnosis and operative dangers due to seminal vesiculitis in prostatic patients. He has found that seminal vesiculitis is relatively frequent in conjunction with hypertrophy of the prostate, either in the form of true suppurative or sclerous vesiculitis or of perivesiculitis. The existence of a little mass prolonging the prostate along the urethra and corresponding lymphatic tracts, seeming to form a part of the prostate and fixing it to the neighboring soft parts, may sometimes make it difficult to make a differential diagnosis between common hypertrophy and cancer of the gland.

In Thévenot's opinion, the possibility of a suppurative vesiculitis should always be taken into consideration, for: (1) It often accompanies prostatitis, and inflammatory adhesions may make the enucleation of a fibroid prostate a very difficult matter; (2) the operation being performed in an infected field, care must be taken to avoid after-infection; (3) it is also to be feared that the ejaculatory ducts may discharge the pus from the vesicles into the prostatic wound, thus causing infection.

GAYET has studied Ambard's urea coefficient in prostatic cases in a series of 54 cases, in which he made 76 determinations of the coefficient, from

which he draws the following conclusions: The coefficient by itself does not pretend to furnish a reliable picture of the anatomical changes in the kidney. It simply reflects the physiological condition of a single function, the elimination of urea. Retention, especially acute complete retention, is an important factor in azotæmia; the highest urea content in the blood serum is found in these cases. But the removal of the obstacle by a permanent catheter or cystostomy brings about a rapid decrease of the uræmia.

The prognosis is grave only when it persists without change after the retention has stopped. The urea coefficient makes it possible to follow very accurately the improvement brought about by the treatment of the retention, and to choose the best moment for radical operation. It does not duplicate the results obtained from determining the amount of urea in the blood. There is sometimes disagreement between the results of these two methods, and Ambard's method reveals more latent cases of azotæmia. It is also surer and more reliable than the methods by elimination of coloring matters. If it is supplemented by a study of the other renal functions, elimination of water, chlorides, etc., and by a study of the patient's other organs, it aids in giving precise indications for operation, and thus in improving the statistics for prostatectomy.

J. DUMONT.

Lower, W. E.: A Technique for Performing a Shockless Suprapubic Prostatectomy. *Ann. Surg., Phila.*, 1914, lix, 278. By Surg., Gynec. & Obst.

The shock-producing factors of prostatectomy are the anæsthetic, the amount of painful traumatism, and the hæmorrhage. Lower seeks to avoid these factors by the following technique: (1) Administering morphine and scopolamine an hour before the operation; (2) placing 60 to 90 ccm. of 5 per cent alpinin solution in the bladder immediately before operation; (3) using nitrous oxide as the general anæsthetic; (4) infiltrating with a 1:400 solution of novocaine (a) the site of the suprapubic incision in the skin and fascia, (b) the anterior bladder wall, (c) the bladder mucosa over the prostate, and (d) by deep injections the prostatic capsule at the sides of and beneath the gland; (5) using careful and gentle manipulations in the enucleation; (6) packing narrow strips of gauze about a retained catheter, on top of the mucous membrane, so as to obliterate the dead space, bring the ends of the urethra together, and prevent hæmorrhage.

S. W. MOORHEAD.

Allen, C. W.: Prostatectomy under Local Anæsthesia. *N. Orl. M. & S. J.*, 1914, lxvi, 581.

By Surg., Gynec. & Obst.

The author discusses the surgical technique of prostatectomy with local anæsthesia. He injects one-sixth of a grain of morphine and one one-hundred-fiftieth grain of scopolamine one hour before operating. The bladder is opened by in-

filtration anæsthesia; the vesical surface of the prostate is then injected near the base of the gland. The needle is passed through the mucosa in an attempt to infiltrate the region between the mucous membrane of the bladder and the capsule of the prostate. Two or three drams of a one-half per cent solution of novocaine containing 15 minims of adrenalin to the ounce is injected at each of the above points. If the gland is very large or there is much of a projection above the urethral opening, other injections may be made. A suppository containing ten grains of anæsthesia is introduced into the rectum in order to anæsthetize it so that a finger can be introduced without any discomfort. The writer remarks that in many cases the introduction of the two-step operation is justifiable, the bladder being drained first by local anæsthesia, the prostate being afterwards removed.

While the author's paper is not exhaustive and he does not go much into detail, nevertheless the reviewer is of the opinion that this or some similar technique will solve many of the questions involved in difficult prostatectomies. A. C. STOKES.

MISCELLANEOUS

Gaillard, A. T.: Modern Laboratory Methods in the Diagnosis of Surgical Diseases of the Genito-Urinary Tract. *Ann. Surg., Phila.*, 1914, lix 267. By Surg., Gynec. & Obst.

Under the above title Gaillard presents the claims of microscopy of the urine to the position among laboratory methods in the examination of patients suffering from lesions of the urogenital tract. He finds it possible to thus recognize the site of the lesions, by the character of the epithelial cells; its character, by the varieties of cells and intercellular tissues present; and the nature of the individual's "constitution," by the nature of the pus-cells, these being coarsely granular, refractive, and without visible nuclei when the body resistance is good, and finely granular, with visible nuclei and irregular cell margins when the constitution becomes impaired. Malignant disease can be recognized after ulceration has taken place by the presence of the characteristic tumor cells.

Cryoscopy and the various other tests of renal sufficiency are summarily disposed of as follows: "These tests have been briefly referred to only to be condemned, for it is difficult to understand why time should be wasted on them when microscopical

examination affords such positive proof of all that we desire to know regarding renal sufficiency or insufficiency." S. W. MOORHEAD.

Nicolle, C., and Blaizot: A Non-Toxic Antigonor-rhœal Vaccine; and Its Use in the Treatment of Gonorrhœa and Its Complications (Un vaccin anti-gonococcique atoxique; son application au traitement de la blennorrhagie et de ses complications). *J. d'urolog.*, 1913, iv, 734.

By Journal de Chirurgie.

Vaccination for gonorrhœa, like all other vaccine treatments, has hitherto met with a seemingly unsurmountable obstacle: the toxicity of the vaccines. Besredka's sensitized vaccine was a step in the direction of overcoming this, but it was not enough. There was always a reaction following the inoculation of the vaccine and sometimes it was very violent; moreover, sensitized vaccines are not stable.

Nicolle and Blaizot have succeeded in entirely overcoming the toxicity of the vaccine and rendering it stable. The efficacy of their vaccine treatment is remarkable, judging from 200 cases, 24 of which were ophthalmia, 25 orchitis, 3 rheumatism, and 127 acute, or chronic urethritis. Cases of ophthalmia recovered after only a few inoculations, thus avoiding any serious ocular complication.

In orchitis the pain stops a few hours or a day after the first inoculation, and the temperature falls. This rapid recovery prevents sterility. In gonorrhœal rheumatism the patient recovers very rapidly after 2 to 8 inoculations; the authors cite the case of a woman who had had it for eight months and had recovered on the eighth day of treatment. The action of the vaccine is equally apparent in both acute and chronic urethritis; pain, cystitis, and discharge stop quickly, often after the third inoculation; old discharges also are quickly cured. None of the patients treated in this way had orchitis; so that inoculation of the vaccine prevents extra-urethral complications. In women the results seem to be the same as in men. Recovery was very rapid in two cases of metritis and salpingitis.

In the treatment, one-half ccm. of vaccine is injected each time. Three millions of microbes are diluted with one and one-half ccm. of physiological solution. The injection is made intravenously or intramuscularly. It is painless and not accompanied by any febrile reaction. In acute cases injections are repeated every day or every two days, in chronic ones every two to four days. J. TANTON.

SURGERY OF THE EYE AND EAR

EYE

Mullen, J.: A Case of Melanotic Sarcoma of the Choroid. *Tex. St. J. Med.*, 1914, ix, 320.
By Surg., Gynec. & Obst.

The author reports a case of a 32-year-old woman with an intra-ocular tumor giving symptoms for a period of 9 months, finally causing acute secondary glaucoma two days before enucleation. The microscopical diagnosis was melanosis of the choroid, and the case was reported to bring out a discussion of the frequency of recurrence, regional or metastatic.

EARLE B. FOWLER.

Myers, D. W.: Cataract Extraction in the Capsule without Iridectomy. *J. Ophth., Otol. & Laryngol.*, 1914, xx, 55.
By Surg., Gynec. & Obst.

The author gives a very complete report of 43 cases of cataract operated on by him. In these cases the lens was removed in its capsule with or without an iridectomy; a wide puncture of the iris being done in some of the latter group. The author believes the intracapsular extraction a safe operation, particularly if the cases are selected, the lens slipping out more easily in the older cases. He advises resorting to capsulotomy if the lens does not come away readily. In all operating he uses a rigid speculum holding the lids away from the globe. EARLE B. FOWLER.

Cross, A. E.: Simple Chronic Glaucoma. *J. Ophth., Otol. & Laryngol.*, 1914, xx, 71.
By Surg., Gynec. & Obst.

The causes and some of the methods of treatment of simple chronic glaucoma are discussed. After a brief description of the anatomy of the ciliary body and the changes occurring with advanced age, Cross discusses various views on etiology, as follows:

Walfors holds that high tension and glaucoma are not identical; that the primary cause is in some disease of the choroid. Schorn says the increase is finally due to loss of support of the ciliary muscle and its tendons, thereby allowing the intra-ocular pressure to be exerted directly on the sclera when it becomes perceptible to touch. Troncoso considered that the increase in albumin content of the aqueous was the result of an essential lesion of the vascular walls similar to those found in interstitial nephritis. Impregnation of the vitreous by the increased albumin content would cause increased pressure in this chamber forcing the iris forward and obstructing Schlemm's canal. Abadie believes glaucoma frequently caused by irritation of the circular nerve plexus covering the ciliary zone, that section thereof and not filtration is responsible for the antiglaucomatous action of iridectomy.

Stock, from a series of 100 normal eyes, concluded the normal tension to be 12 to 27; Schweinitz puts the lower limit at 20. The question is raised, "If the tension is below 20 can we make a positive diagnosis of glaucoma?" The author believes that it can when we have cupped nerve head, gradual or complete loss of field in the nasal quadrant, reduced visual acuity, sluggish pupil, and shallow anterior chamber even without increase of tension above normal.

In reference to treatment Cross evidently favors medicinal (myotic) and general constitutional treatment in the simple chronic form, operating only in the acute cases or those not responding to eserine. The results of the newer operations are not discussed as it is yet too early to judge of their ultimate results.

EARLE B. FOWLER.

EAR

Goldbach, L. J.: Squamous Epithelioma of the Middle Ear and Mastoid. *Laryngoscope*, 1914, xxiv, 128.
By Surg., Gynec. & Obst.

The author reports a case of a woman who complained of a very painful polypoid growth in the ear canal with offensive purulent discharge, dizziness, and a sinus leading from the tip of the mastoid to the auditory canal. He removed a fibro-angioma from the canal and performed a radical mastoid operation from which the patient made an uneventful recovery, though a slight oozing continued from the canal. Five months later the patient returned with a growth in the canal and in the mastoid scar which was tender and bled freely. The growth continued to increase in size for six months although cauterized frequently with silver nitrate stick alternating with the electric cautery.

All the growth was then removed from the middle ear, antrum, neck, and side of the face and the surrounding area of the mastoid cauterized. The wound healed slowly and the deeper glands in the neck became enlarged and the whole side of the face was red, oedematous, and painful. The pathological report was squamous carcinoma.

ELLEN J. PATTERSON.

Tomlin, W. S.: Mastoiditis: a Complication and an Entity. *Interst. M. J.*, 1914, xxi, 145.
By Surg., Gynec. & Obst.

The writer calls attention to the fact that, physiologically speaking, the mastoid cavity being a part of the middle ear is probably involved in all cases of acute suppurative otitis media, and from anatomical reasons it is rarely if ever primarily involved except from traumatism.

The causes of mastoiditis are mainly those of

otitis media and are enumerated somewhat in detail, and the fact referred to that beginning mastoiditis is an inflammation of the mucous membrane lining the mastoid antrum and cells, and is usually an acute process. Development of osteitis causes breaking down of the cell walls and the formation of cavities or even one large cavity in the mastoid.

He describes the symptoms of acute mastoiditis which are well known and says that an acute suppurative mastoiditis that runs a very brief course of three or four or ten days, apparently recovering, indicates a streptococcus mucosus infection; and three or four to six weeks later a fulminating type of mastoiditis may develop.

He lays stress on one particular point in examining acute and subacute cases, viz., that as the innermost portion of the external auditory canal at its posterosuperior quadrant forms a part of the antral wall and if inspection shows a bulging over this area, delay in operating is at best a waste of time, as an operation is indicated and postponement only jeopardizes the patient's hearing or even life. This he considers the most important indication for an early operation, with the exception of symptoms of a grave nature indicating intracranial involvement.

As a means of diagnosis, transillumination is recommended by the writer, but he admits its unreliability and perhaps does not give sufficient importance to the skiagraph which is a very useful aid to diagnosis. Bacteræmia and the blood count, advocated by McKernon and Sondern as an important aid, and the coagulability of the blood on which Urbantschitsch lays some stress, are also considered as a means of differential diagnosis.

The prognosis of mastoiditis he considers depends on so many factors that even to name them would occupy too much space. While there is free drainage with no complications, as is generally conceded, there is no danger to life, but this applies to the time being only, for at any time this free exit of the discharge may become obstructed and serious symptoms supervene. He refers to the fact that a large percentage of acute mastoiditis may recover with suitable or even inefficient treatment, but in chronic mastoiditis the percentage is much smaller, which would seem quite obvious. The outlook for

the young he considers not so good, but after the age of forty it is much better.

The treatment of mastoiditis is divided into prophylactic, conservative or ameliorative, and operative, the prime object being conservation of hearing. As prophylactic methods he recommends the removal of the usual predisposing causes, free and prompt incision of the drum-membrane in acute otitis media, thus establishing free drainage. Suitable treatment in every case of discharging ear should be recommended. In ameliorative treatment, asepsis he regards as the *sine qua non*; he is of the opinion that irrigations with the mildest antiseptics may be used rarely, but thinks it is a method not much to be recommended, and prefers alcohol or benzine as a better means of cleaning the ear, and dressing with a strip of gauze best meets all requirements. Powders, he says, are practically no more used as they do not penetrate the crevices and are apt to cake and thus interfere with drainage.

As the best treatment short of operation he recommends the use of silver nitrate or copper sulphate or the cautious use of the curette or snare to destroy granulations, followed by alcohol instillations. In acute cases the usual treatment is adopted.

The author believes subacute cases are sometimes modified by the use of Crede's ointment, or mercurial emplastra, and mention is made of the leucodescent lamp having some advocates. He is of the opinion that operation on the mastoid should be performed more frequently at an early date, and the danger to life and hearing by postponement is emphasized.

W. H. JAMIESON.

Braislin, W. C.: The Use of Vaccines after the Mastoid Operation. *Ann. Otol., Rhinol. & Laryngol.*, 1914, xxii, 1085. By Surg., Gynec. & Obst.

The author reports the favorable results obtained in five out of six cases treated with vaccines, autogenous or stock, for bacterial infections complicating mastoidectomy. He reports cases presenting complications of infiltration of the cervical glands; elevated temperature of obscure cause; delayed granulation of wound; pain in limbs and back; post-operative pneumonia, and infection of the labyrinth.

ELLEN J. PATTERSON.

SURGERY OF THE NOSE, THROAT, AND MOUTH

NOSE

Oppenheimer, S.: *The Surgical Anatomy, Diagnosis, and Treatment of the Inflammatory Affections of the Nasal Accessory Sinuses in Children.* *Med. Rec.*, 1914, lxxxv, 328.

By Surg., Gynec. & Obst.

It is the author's opinion that sinusitis, both acute and subacute, is more common in the child than is generally conceded, and this statement applies not only to the adolescent but also to the small child and infant.

Sinusitis in the child is practically never of primary origin, but the close relation of these tissues with the nasal mucosa is such that when the latter is inflamed the former must invariably be simultaneously involved, thus explaining the frequency of sinusitis during the infectious diseases of childhood. In diagnosis, the author attaches great weight to the intranasal findings, the presence of headache or localized pain, transillumination, and previous to the tenth year he regards the stereoscopic radiograph as the most valuable single diagnostic medium.

The author advocates conservative treatment based upon the restoration of the drainage system with as little destruction of tissue as possible.

ELLEN J. PATTERSON.

Beck, J. C.: *Histologic Pathology of the Accessory Sinuses.* *Ann. Otol., Rhinol., & Laryngol.*, 1913, xxii, 913.

By Surg., Gynec. & Obst.

From his findings in the study of the minute pathology in 140 cases operated upon for chronic sinusitis, suppurative and nonsuppurative, in which the symptoms of asthma were prominent, the author bases the following conclusions:

1. That the pathological changes found in the middle turbinates and ethmoid in asthma cases and nonsuppurative sinusitis show rarefaction of the bone resembling that found early in osteomalacia, acromegalia, and otosclerosis, and is suggestive of a possible etiological factor in some disturbances of the polyglandular system.

2. In nonsuppurative sinusitis the conspicuous absence of inflammatory elements and the presence of myxomatous degeneration at the expense of loss of glandular structures is very apparent.

3. In suppurative sinusitis the great prevalence of round-cell infiltration with tendencies to necrosis and granulation formations is characteristic.

4. The lining of the larger sinuses in protracted suppurative types is so changed as to preclude resolution and the sinuses cannot be obliterated unless the entire epithelial lining is destroyed.

5. The pathological characteristics of both suppurative and non-suppurative forms of sinusitis are frequently met with in the same case.

6. The similarity in the changes of atrophic rhinitis in the early stages and of non-suppurative sinusitis, especially in the bone, would suggest a similar etiological factor in the disturbance of the glands of internal secretion. ELLEN J. PATTERSON.

Rau, E.: *Diseases and Pathology of Nasal Accessory Sinuses.* *Ky. M. J.*, 1914, xii, 100.

By Surg., Gynec. & Obst.

It has been claimed that of the bacteria most often found as a causative factor of sinus disease, the influenza bacillus holds first rank, the pneumococcus next, staphylococcus pyogenes aureus and albus, and the streptococcus pyogenes — but whether they enter directly through the nasal passages or are carried by way of the blood-stream has not been fully determined.

The pathological changes that take place in these infections and inflammations of the sinuses depend upon the virulence of the infection, the length of time that the disease has been present, the amount of resistance the sinus has to inflammation, and the condition of the drainage system.

ELLEN J. PATTERSON.

Dabney, S. G.: *Symptoms and Diagnosis of Diseases of the Nasal Accessory Sinuses.* *Ky. M. J.*, 1914, xii, 102.

By Surg., Gynec. & Obst.

The author cites the cardinal symptoms, subjective, objective, and external, of catarrhal and purulent inflammations of the sinuses and considers the differential diagnosis can be satisfactorily made by local examination of the nose, teeth, and eyes, together with transillumination and radiography. He mentions the perception by the patient of a disagreeable smell present in the nose as an important indication of pus in a sinus, generally in the maxillary.

ELLEN J. PATTERSON.

Stucky, J. A., and W. S.: *Treatment of Diseases of the Nasal Accessory Sinuses, Surgically and Otherwise.* *Ky. M. J.*, 1914, xii, 105.

By Surg., Gynec. & Obst.

The important point in the treatment of all cases of sinusitis is to create and maintain unobstructed drainage of all sinuses and to institute general eliminative treatment.

In those cases requiring intranasal operation, the author uses local anæsthesia and after operation applies a dropperful of argyrol (25 per cent) and no packing, but a flexible perforated splint (Kyle's). The author thinks few cases require extranasal

operation if properly cared for, but all treatment both operative and post-operative should be strictly aseptic and antiseptic, and especial attention should be given to the internal secretions and excretions.

ELLEN J. PATTERSON.

MacFarlan, D.: The Initial Incision in the Submucous Operation. *J. Ophth., Otol. & Laryngol.*, 1914, xx, 83.
By Surg., Gynec. & Obst.

The author considers the initial incision of paramount importance in the success of the submucous operation. He advocates a straight cut, beginning high and posterior to the junction of the columnar and triangular cartilages and inclined forward as it reaches the floor of the nose.

ELLEN J. PATTERSON.

MacKenzie, G. W.: Complications that May Arise During or After the Submucous Operation for the Correction of Septal Deviations. *Ann. Otol., Rhinol. & Laryngol.*, 1914, xxii, 1020.
By Surg., Gynec. & Obst.

Complications which may arise during operation are cocaine and adrenalin poisoning; air embolism, when infiltration anæsthesia is used; laceration of the mucous membrane, from faulty initial incision; perforation of the mucous membrane from rapid, careless work; retention of bone fragments; fracture of the bony septum; and faulty packing after operation.

In order to avoid infection, the author operates under strictly aseptic conditions (never performing turbinotomy at the same sitting) and avoids operating in the presence of any acute inflammation of the nose or throat.

Other complications which may follow operation are hæmatoma, erysipelas, acute sinusitis, and external deformity.

ELLEN J. PATTERSON.

Carter, W. W.: Operations for the Correction of Deformities of the Nose. *Med. Rec.*, 1914, lxxv, 237.
By Surg., Gynec. & Obst.

The author has devised his bridge-splint operation to correct nasal deformities where there is no loss of tissue, while in those cases where there has been more or less destruction of the bony and cartilaginous framework of the nose he uses bone transplantation. The bridge-splint consists of two small intranasal splints perforated with several small holes and a lightly constructed steel bridge, the two wings of which are padded on the edge with rubber, hinged together in the middle, and their play controlled by a thumbscrew. After the correction of the deformity, the intranasal splints with silk-sutures knotted in their holes are introduced and the sutures carried through the roof of the nose; the bridge-splint is then applied and adjusted and the sutures tied over the hinge to secure sufficient tension to pull the nose into proper position and thus correct intranasal as well as external deformity.

In those cases where there is a deficiency of the bony framework, the author considers that bone transplantation under strict asepsis in every detail

is indicated. He makes a curvilinear incision, convexity downward, between the eyebrows to the periosteum over the frontal bone, and elevating this flap he makes a transverse incision through the periosteum and into the bone in order to favor osteogenesis at this point. After elevating the periosteum for three-eighths of an inch, he elevates the skin and subcutaneous tissue over the dorsum of the nose, and, without removing the blood from the nasal wound, introduces two inches of the ninth rib with periosteum preserved on the outer surface and the upper end inserted under the periosteum flap and closes the wound with horse-hair sutures.

ELLEN J. PATTERSON.

THROAT

Dabney, V.: Immediate and Remote Sequelæ of Radical Removal of the Faucial Tonsil; Observation of Two Hundred Cases. *Ann. Otol., Rhinol. & Laryngol.*, 1913, xxii, 1057.
By Surg., Gynec. & Obst.

Among the sequelæ following tonsillectomy the author classes primary and secondary hæmorrhage as most important, then hyperpyrexia, infarct of the lung, sepsis, emphysema, pneumonia, pleurisy, rheumatism, nervous phenomena, and injury to the pillars and adnexa. In order to avoid these he thinks the operation should be performed in a hospital under rigid asepsis, by one experienced in its performance, with the anæsthetic administered by an expert and the convalescence zealously followed.

ELLEN J. PATTERSON.

Roberts, W. H.: Tonsillectomy in the Upright Position under Ether. *Laryngoscope*, 1914, xxiv, 132.
By Surg., Gynec. & Obst.

The advantages in operating in the upright position are good illumination and accessibility of the parts to be operated on; freedom with which the assistant can sponge; control of hæmorrhage and prevention of entrance of blood into the larynx; thoroughness with which the operative field can be examined for tonsil remnants and ease of control of patient's head by the anæsthetist.

The technique of the author's method of operating is as follows: After the patient is anæsthetized in the prone position, he is placed in a chair in front of the operator, who is seated; the anæsthetist stands behind the patient to control the head and continue the administration of ether through a tube introduced into the right nostril. The operator makes his initial incision with a small bladed knife, continues the dissection with a blunt pointed Tyding's knife and the finger and finishes the enucleation with the Tyding snare.

ELLEN J. PATTERSON.

Johnston, R. H.: Straight Direct Laryngoscopy, Bronchoscopy, and Esophagoscopy. *Am. J. Surg.*, 1914, xxviii, 57.
By Surg., Gynec. & Obst.

The essentials of a successful bronchoscopist are a thorough knowledge of the anatomy of the parts,

a steady hand, extraordinary skill in handling instruments, and patience and perseverance to carry him through hours of hard work and disappointment.

The author considers it a mistake to economize on instruments and personally prefers those devised by Jackson of this country to those of Killian and Brunings of Europe.

The use of general anæsthesia is more prevalent in Europe than in this country, as American operators are gradually getting away from general anæsthetics, believing that they greatly increase the danger of tube work. In endoscopic examination of children under four years of age, the author uses no anæsthesia, but in children over eight years of age he uses ether anæsthesia for bronchoscopy and deep œsophagoscopy, and for local anæsthesia in adults he considers alypin and novocaine less toxic than cocaine.

ELLEN J. PATTERSON.

MOUTH

Blakeway, H.: *The Treatment of Harelip and Cleft Palate.* *Practitioner*, Lond., 1914, xcii, 219.

By Surg., Gynec. & Obst.

This paper was presented with a view of facilitating discussion as to the kind of operation which will produce the best results, both cosmetic and functional, especially as regards the voice.

The author briefly reviews the history, naming Le Monnier as the first to operate in 1764. In 1816 Von Graefe sutured and cured a cleft of the soft palate. In 1819 Roux reported what was supposed to be the first staphylorrhaphy. An important advance was made in 1845 when Fergusson advocated the division of those palatal muscles which by their contraction might separate the edges of the cleft, and by the year 1864 had operated upon 134 cases, obtaining union in 129 of them; he operated at or after puberty and never used chloroform.

In 1859 Weber of Bonn advocated a method closely allied to the Brophy method and two years later Reeves tried much the same process by slower means, using a padded horseshoe-shaped clamp. These suggestions were lost sight of for many years until they were revived and improved upon by Brophy.

To Langenbeck belongs the credit of being the first to deliberately plan the stripping up of a mucoperiosteal flap and closing the cleft, his age of choice for operation being 12 to 15 years.

The great advance was made by Thomas Smith, who in 1868 advocated operating upon small children before they had learned to speak, using chloroform as an anæsthetic. The advantage of operating upon the harelip in a double case is that when the lip is closed the cleft will also close to a very considerable extent. The author's criticism of Lane's operations

is that there is too much scar tissue formed which renders the soft palate less pliable; from the series studied the mortality was found to be 14.3 per cent.

In cases operated upon by the Langenbeck method the mortality was practically nil, the prospects of closure are good even though requiring two or three operations, and while the functional results are at times perfect, as a rule there is much to be desired. The author does not agree with Brophy from an embryological standpoint.

As to the prospect of closure of the bony palate the author has not seen cases in which more than the alveolar arch has closed. As to speech development, he has not seen patients who have learned to speak, subsequent to the operation, and says, "He, Brophy, makes no appeal to a series of cases to prove his statement that the patients learn to speak normally."

The author concludes that the Langenbeck operation is the operation of choice, offering the best results, both anatomically and functionally. If associated with harelip the lip should be done first at the age of 2 or 3 months and the cleft at about the end of the second year.

H. A. PORTS.

Dean, L. W.: *Report of a Case of Compound Follicular Odontoma of the Superior Maxilla.*

Ann. Otol., Rhinol. & Laryngol., 1913, xxii, 1077.

By Surg., Gynec. & Obst.

The patient, a young woman aged 20 years, sought relief from pain in the upper third molar. The removal of the pulp and filling of the root canals did not relieve her and the tooth was extracted. Two weeks later a seropurulent discharge appeared from the socket and a number of rudimentary teeth were discharged through this opening. Examination showed a sinus leading upward from the socket of the upper right third molar, which led into a large cavity. A diagnosis of odontoma was made.

An opening was made into the maxilla above the gingival border and a cavity, extending forward, over and external to the first and second molars and inward to the median suture, was exposed. The cavity contained a number of rudimentary teeth and irregular pieces of bone, thirty-five in all. The antrum was opened and found normal. The cavity was drained through the antrum and nose. The external wound was closed, but reopened, and was finally closed at a second operation.

In closing cavities in the maxilla which communicate with the mouth, the author removes enough of the alveolar process to insure a good apposition of periosteum covering the external and internal surfaces of the process. These flaps are then brought together by means of silkworm gut which is passed over strips of very narrow rubber tubing. The suture holds the splints, one on the lingual, the other on the buccal, in place.

H. A. PORTS.

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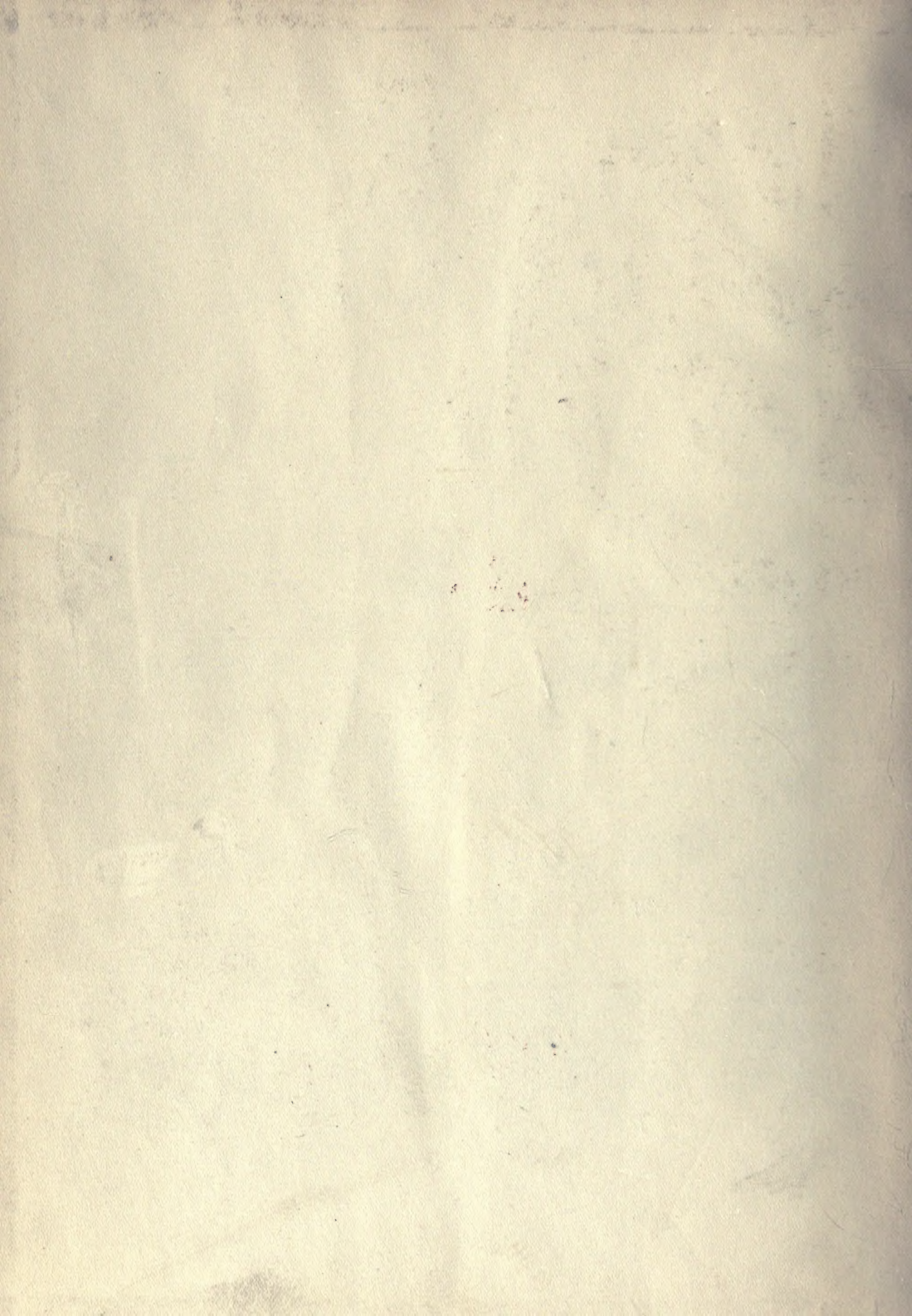
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